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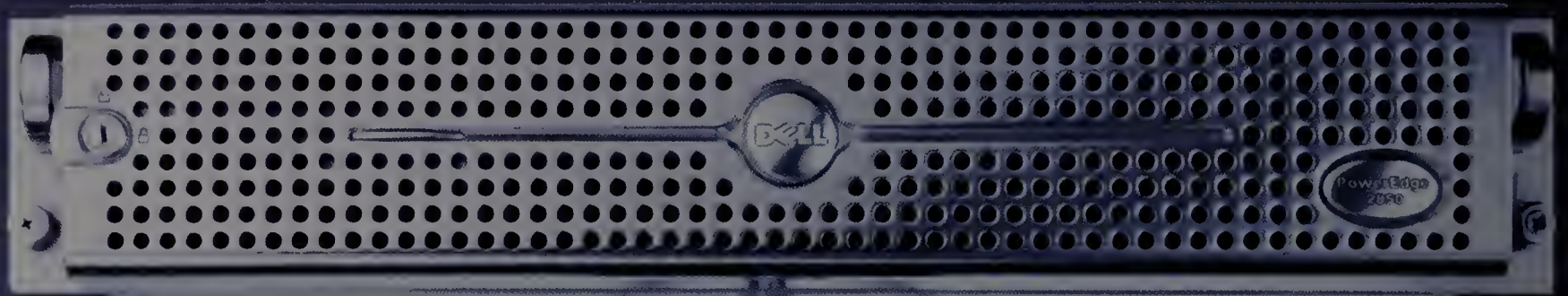
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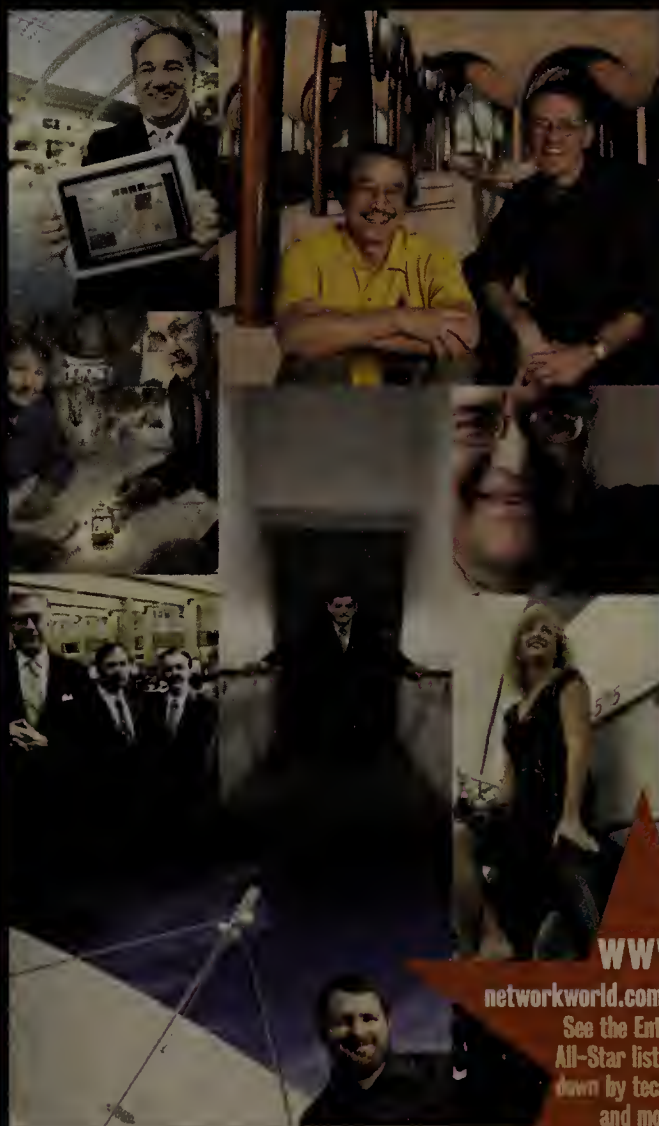
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COOLTOOLS

Sony's Instant Video

Everywhere service offers free and unlimited voice and video calls between IVE members. Page 44.



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Entuity's Bill Tracy, vice president of product strategy, sits on the Hot Seat to talk about what makes his company's network management offering different. **DocFinder: 9833**

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Cool Tools Daily Dose

Senior Editor Keith Shaw looks at Netgear giving more power to powerline gear; Archos pushing a portable camcorder to podcasters; and Belkin readying video iPod cases and stands. **DocFinder: 9540**

Gibbsblog

Columnist Mark Gibbs says digital rights management software will never work: "For Sony — or anyone else for that matter — to

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Hear what leading IT experts and executives such as Ray Ozzie, Ann Livermore, Red Hat CEO Matthew Szulik and more had to say about the future of IT. **DocFinder: 9835**

MSN: Failing semigracefully

IT Borderlands' Ken Fasimpaur offers another edition of the Friday Forbidden Phrase. This week's banned IT term is "powered by," which he calls "a fine illustration of linguistic devolution." **DocFinder: 9836**

attempt to corral the bits on a CD or DVD is simply ridiculous given today's technology and culture, and even more so because physical non-network media will become effectively obsolete for entertainment content within five years at most." **DocFinder: 9837**

Telework Beat

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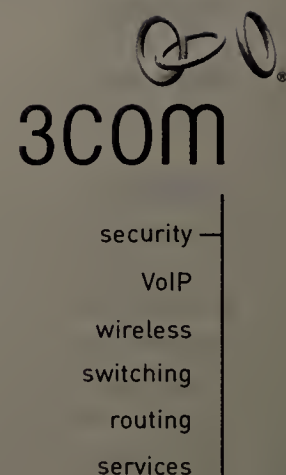
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NEWS

Blockbuster video deal for Cisco

Cisco nabs Scientific-Atlanta for \$6.9 billion to gain access to consumers' living rooms.

BY JIM DUFFY

Cisco's proposed \$6.9 billion buyout last week of Scientific-Atlanta makes clear that the enterprise network leader wants into your living room, too.

The planned takeover of the cable TV set-top box giant paves the way for Cisco to make home entertainment and video its next \$1 billion-a-year Advanced Technology opportunity.

The company's idea is that Cisco is IP, which is the foundation for next generation TV, so Cisco is TV. "Cisco has always done well selling routers to carriers. But they haven't been able to get a real strategic chunk of a provider network," says Rob Whiteley, an analyst at Forrester Research. "The push to IPTV is really going to be one of the things that gets them there. Linksys couldn't do it alone — it's not enough of an end device. So this is really an attempt to marry that — the really intelligent back end with the routers, to a



"Video is an integral part of our strategy that must be a core competency."

John Chambers, CEO, Cisco

really intelligent front end, a cable set-top box."

Analysts say Cisco's move makes sense.

"We believe TV content will drive huge growth of Internet traffic, with implications for the Internet's largest equipment vendor, Cisco," states Anton Wahlman of

investment firm Needham and Co. "Cisco must better understand video, quickly."

If you look on your cable set-top box, you're likely to see Scientific-Atlanta's logo or that of Motorola. Scientific-Atlanta also makes head-ends, hubs, advanced encoding devices and digital content managers for service providers. It has installed about 56 million cable devices in the United States, representing about 40% of the market.

The acquisition helps Cisco build an end-to-end portfolio of IP TV and triple play — bundled voice, video and data services — infrastructure for service providers. Cisco already had the routers, switches and cable modem termination systems for cable companies; it also recently acquired DVD home entertainment technology with its purchase of KiSS Technology.

The buyout will give Cisco set-top boxes used to provide interac-

tive, on-demand digital TV for consumers and, when combined with Cisco's Linksys consumer network portfolio, a broadband router/gateway for other residential entertainment applications.

"Video is an integral part of our strategy that must be a core competency," said Cisco CEO John Chambers during a Webcast announcing the acquisition. "Video is too valuable to do in a partnership arrangement."

The deal shows how traditional suppliers of enterprise network equipment are looking to diversify.

"Consolidation among equipment players is intensifying as they are faced with slower sales in the enterprise market," says Susan Kalla, managing director of telecom and media research at Caris and Company, in a bulletin on the acquisition. "Equipment manufacturers are looking to enter the booming ... consumer market for digital television and mobile video offerings."

Cisco will pay \$43 per share in cash for each share of Scientific-Atlanta, and assume outstanding options. The deal matches Cisco's previous largest acquisition — the \$6.9 billion purchase of metropolitan optical transport vendor Cerent in 1999.

The acquisition of Scientific-Atlanta is expected to close in the third quarter of Cisco's fiscal year 2006. It has been approved by the board of directors of each company.

Following the close of the transaction, Scientific-Atlanta will become a division of the Routing and Service Provider Technology Group under the leadership of Cisco Senior Vice President Mike Volpi. Scientific-Atlanta CEO Jim McDonald will report to Volpi.

Scientific-Atlanta was founded in 1951. The company has more than 7,500 employees. For its fiscal year 2005, which ended July 1, Scientific-Atlanta reported revenue of \$1.91 billion. ■

Microsoft turning toward an all 64-bit world

BY JOHN FONTANA

Microsoft made crystal clear last week that it is herding customers toward 64-bit platforms. And while users and analysts say that's the right direction, they also believe companies may be slow to fall in line.

With the next versions of many of Microsoft's servers, including Exchange 12, Compute Cluster Server and the R2 release of the Longhorn server, Microsoft will produce only 64-bit editions.

The announcement was one of many the company made last week, including the debut of a desktop search engine that includes management and deployment controls for IT, the first release under Microsoft's Dynamics brand for its struggling business applications.

Microsoft is hitching its software

wagon to 64 bit and its promise of a more robust and powerful computing platform. The platform, however, comes with special design considerations that differ from 32-bit platforms, especially related to firmware, hard disk partitions and device drivers. And while the x64 architecture supports 32-bit applications, the ramp-up to 64 bit will align with applications optimized for that platform, experts say.

Microsoft already has 64-bit versions of servers, including the recently released SQL Server 2005, but there also is a 32-bit version. Microsoft will have a 32-bit version of Windows Server Longhorn supported until 2017.

"It is about time Microsoft put its pants on and said 'you know, if you want to run our technology this is

See Microsoft, page 14

Product rush

Microsoft last week revealed a mishmash of upcoming offerings, including management tools, business applications, desktop search and future servers that will be available only as 64-bit software.

Software	Comments	Availability
Exchange Server 12	64-bit only	Late 2006, early 2007
Windows Compute Cluster Server 2003	64-bit only	First half of 2006
Windows Server Longhorn Small Business Server	64-bit only	2007
Centro, infrastructure bundle for midsize businesses	64-bit only	2007
Windows Server Longhorn R2	64-bit only	2009
Virtual Server 2005 R2	Price dramatically cut on what was once slated to be a free service pack.	December 2005
System Center Capacity Planner 2006	Modeling tool.	Early January 2006
System Center Essentials	Single console for midsize companies to update, monitor and track IT environment.	2007 (will also ship with Centro)
Dynamics GP (Great Plains)	First release under new business application brand.	Now
Windows Desktop Search	Deployment, management centrally controlled by IT.	Now

NEWSbits

FCC commissioner to resign

■ Kathleen Abernathy will resign from the FCC effective Dec. 9, leaving the telecommunications regulatory body with two openings to fill and missing one of its consistent champions of deregulation. Abernathy, a Republican, announced her departure last week. Her resignation leaves the FCC with only three confirmed members on the five-person commission: Chairman Kevin Martin, a Republican, and Commissioners Michael Copps and Jonathan Adelstein, both Democrats. Republican Deborah Tate has been nominated to fill the position created by the departure of former Chairman Michael Powell in January, but her nomination has yet to be confirmed by the Senate.

Cogent fiber lines are cut

■ ISP Cogent Communications last week had two fiber cuts in its network from construction mishaps, disrupting service in the Southeast and Mid-Atlantic regions. According to Cogent, a fiber line between Houston and Tampa, Fla., was cut Thursday around 9:35 a.m. EST. The second fiber break was between Philadelphia and Washington, D.C. That fiber was spliced, and routing was restored at 3:45 p.m. EST Thursday. The cuts occurred in Washington and New Orleans. Latency on the Cogent network over the last four hours was at "warning" status, according to Internet performance monitor Keynote, and network availability was "critical." The Internet Storm Center stated the outage was "major."

IT vendors push healthcare net

■ Accenture, Cisco, IBM, Microsoft, Northrop Grumman, Oracle and Sun are among a wide range of technology and consulting companies tapped recently to design an \$18.6 million Nationwide Health Information Network for the U.S. Health and Human Services Department. The NHIN is the HHS plan for an Internet-based network that links disparate healthcare organizations, such as local clinics, city hospitals, universities and government health agencies, to share and have secure access to clinical data. The NHIN will be designed and rolled out through four consortia, each consisting of several IT,

{quote of the week}
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"Sarbanes is Y2K for the rest of my life."

Sharon Mandell, vice president of technology, Knight Ridder, speaking at a panel discussion with IDG editors in San Francisco

consulting, security and healthcare companies and organizations. This will be led by Accenture, Computer Science Corporation, IBM and Northrop Grumman. Each consortium is responsible for NHIN coverage in specific areas of the country. Each consortium will put together an IP-based network prototype during the coming year. When the prototypes are finished, the results will be given to the American Health Information Community, an advisory committee to the HHS focused on digitizing and network-enabling healthcare records.

BellSouth pitches wireless backup

■ A new wireless data back-up service is the first jointly developed offering for business customers from BellSouth and Cingular Wireless. The service was born out of the communications outages that plagued BellSouth, Cingular and other carriers during this year's Gulf Coast hurricanes. In the wake of those events, businesses have a renewed interest in building as much network diversity into their operations as possible, BellSouth says. In the event of a wireline network outage, data will be routed through Cingular's 70K to 135K bit/sec network, which is available in 13,000 cities and towns. Wireless data backup will also be enabled for Cingular's new 400K to 700K bit/sec network, which is scheduled to be launched in 15 to 20 markets by year-end and in most major markets by the end of 2006, according to the company. Pricing for the service, called Wireless Data Backup from BellSouth and Cingular Wireless, ranges from about \$9 to \$50 per month, depending on features the customer selects.

TheGoodTheBadTheUgly

BlackBerry reprieve. The Department of Justice has asked a judge to ensure that government users can continue to send each other e-mail on their "essential" BlackBerry devices, even though the court has ruled against the maker of BlackBerry devices in a patent-infringement case.

Sober-ing news about worms. Yet more variants of the mass-mail Sober worm are making the rounds of the 'Net and could infect Windows-based computers, anti-virus firms warned last week. Thus far, the variants present a low risk and haven't been widely distributed. A "large number of samples" of the variants have been intercepted in e-mail traffic, indicating that the worms are spreading by spam containing infected messages, according to Kaspersky Lab.



< Sony relents over CD spyware. After two weeks of relentless criticism over its XCP copy-protection software, Sony BMG Music Entertainment is pulling CDs that contain the software from store shelves. The company is also planning to offer customers a way to exchange CDs that contain the flawed copy-protection software, which uses controversial cloaking techniques. Critics have warned that the software, essentially a form of spyware, could gum up a computer's performance or even be used by attackers to attack the machine.

Yankee Group changes hands

■ The Yankee Group last week announced it is under new ownership and leadership. Emily Green, formerly head of Cambridge Energy Research Associates, is assuming the top post at Yankee under a buyout by her and a private equity firm called Alta Communications. The value of the transaction was not disclosed. Yankee had been owned by Decision Matrix Group, which bought the firm last year from Reuters. Brian Adamik is stepping down as CEO of Yankee Group. Green says there will be no immediate effect on other employees or customers, and noted she is not bringing in "a big team of my own." She says Yankee Group was not actively seeking a shopper. The IT market research industry has undergone significant consolidation in recent years, with Forrester buying Giga and Gartner snapping up Meta Group.

Google to build 'home' Wi-Fi net

■ Google last week said it has won approval from city officials it needs to begin building a Wi-Fi network in its home base of Mountain View, Calif. The Mountain View City Council unanimously approved a plan that gives Google access to city-owned streetlight poles for the placement of wireless access points for a citywide Wi-Fi network. The city of Mountain View will incur no expenses for the Wi-Fi network and stands to gain financially, according to a document on the City Council Web site. Google made a pitch in October to San Francisco leaders outlining the benefits of providing free wireless service. At the same time, Google threw its name into the hat as a potential service provider to enable San Francisco Mayor Gavin Newsom's plan for free, citywide Wi-Fi access.

COMPENDIUM

The world is shrinking

Andre Durand thinks the average number of hops between nodes on a network has shrunk in recent years. His father, a mathematician, has come up with a formula to express the theory — and it relies on the old game "Six Degrees of Kevin Bacon." **Read up at www.networkworld.com, DocFinder: 9844.**

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Users applaud CA's integration plans

BY DENISE DUBIE

LAS VEGAS — Customers turned out in droves last week to hear how, after 18 months of internal restructuring, technology acquisitions and product development, Computer Associates intends to win back their faith.

The company's first fee-based CA World drew more than 6,000 attendees; past shows, which were free, attracted about 10,000. Approximately 125 sponsors, including Microsoft, were there.

The company, which in the near future will officially change its name to CA, revealed the details of its Unicenter 11 release, announced an identity management product that uses Netegrity technology acquired last year, and let customers in on its sweeping integration plans. CA intends to incorporate in future software releases a common set of policies, workflows, databases and processes, which the company said will let its products more easily integrate with each other as well as with third-party and open source tools.

For a company that at one time

claimed to have 1,250 products — although it now refuses to give a number — and that completed eight acquisitions in the last year alone, this level of integration is a significant investment of development time and dollars. The company spent about \$650 million per year for the past five years, or more than \$3 billion, to get this broad integration off the ground.

President and CEO John Swainson added that this is just the beginning: "We aren't doing this because it feels good or because we like pain. We are doing this because it's the best way to get where we need to go." He said the company would continue to put "hundreds of millions of dollars" into its Enterprise IT Management (EITM) strategy.

CA announced 26 new and upgraded products, and sets of products bundled as suites, such as CA Service Availability, which includes an assessment service and products that can use a variety of tools across CA's Unicenter management, eTrust security and BrightStor storage-technology



"As a public company, poor identity management practices put our company at risk and our customers at risk."

Kevin Murphy, senior systems analyst, Reynolds & Reynolds

portfolios. Management vendors have been moving away from point products toward delivering suites for some time, but last week CA customers seemed primed to take advantage of the most recent integration effort by the company.

"I plan to use CA technology to condense four management consoles down to one and then move my staff off the mundane task of watching multiple monitors," said Linda Reino, CIO at Universal Health Services in King of Prussia, Pa. "I trust the automation they have built into the software. I have better things for my people to be doing."

Reino expects to have Unicenter Network and Systems Management (NSM) 11 rolled out in three to six months.

Improving identity management

For Kevin Murphy, senior systems analyst at Reynolds & Reynolds in Dayton, Ohio, integration means his previous Netegrity Web access-provisioning products will work better with CA's eTrust identity and access management (IAM) tools. With CA Identity Manager, announced at the show and set to ship by year-end, Murphy told show attendees he would be able to better install IAM processes across Reynolds & Reynolds dealer and customer networks worldwide. He is beta testing Identity Manager 8.

"As a public company, poor

identity management practices put our company at risk and our customers at risk," Murphy said. "CA's integration of its eTrust technology with the Netegrity products will give me a centralized identity management platform."

Keith Rabun, IS division manager at Austin Energy in Texas, said he went shopping for products to consolidate his service desk operations 18 months ago and decided to work with CA because of the company's plans for integrating its disparate products into a suite. As a beta tester, he is hoping to roll out Service Desk 11 and Unicenter NSM 11 in the next few months.

"We were having a lot of trouble with preexisting legacy systems in terms of documentation and management. We had multiple entry points to manage assets," he said. "It was too much administrative overhead and burden to maintain the multiple systems."

Rabun said he expects to roll out more consistent workflows with Service Desk 11 and take advantage of the increased security available with SNMP Version 3 in Unicenter NSM 11. "As a utility provider we have stringent regulatory requirements, so any added security we can get in our management products is welcome," Rabun said.

Integration is something Maurice Ficklin also is anxiously awaiting in Unicenter Wireless Site Management 11, except he's looking forward to the idea of integrating wired network data alongside wireless statistics in one management console, he said. The director of network services within the IT department at Albany State University in Georgia said the next release of the wireless network-management software, currently in beta tests on his network, will speed

the discovery of access points and report data more intuitively.

"The new version is using multiple protocols in its discovery, and it can find access points in 30 seconds instead of 10 minutes," Ficklin said. "CA really put the time and effort into making sure this stuff would work before they put it out to customers."

Single view wanted

Much of the effort went to establishing the CA Integration Platform, CA said. The premise behind the technology is to let IT managers get a single view of an asset across different systems. Integration Platform also supports a Web services-like flow of information among previously disparate products. The platform incorporates common policies, software agents and CA's management database, which will store in a repository management data collected about networked IT assets.

For instance, various applications under the Unicenter 11 software umbrella, which have reportedly been beta tested by some 500 users, include upgraded agent software that can do the work of multiple agents. For customers that may have had three or four Unicenter software agents for different applications, one agent will replace them.

"The agent technology will be the same across products, and customers won't need to have more instances, since the agent software will work with various management applications to collect data and take action," explained Alan Nugent, senior vice president and general manager of Unicenter.

Despite optimism from customers, industry watchers warn that CA still has a long way to go.

"CA is trying to tell its network executive and high-level IT manager customers that a CA product purchase will help them prioritize and manage their systems and their IT investments more efficiently," said Stephen Elliot, a senior analyst with IDC. "But with these releases, CA has to show it has at least 80% of what its competitors do right now, and then that it all does really integrate. There is still a lot of work ahead." ■

Can open source still save Novell?

BY DENI CONNOR AND JENNIFER MEARS

When Novell releases its fourth-quarter financial results next week, industry observers will be looking for signs of whether the company's big bet on Linux is starting to pay off.

So far Novell has had little to show even though the Linux market is booming. Industry watchers say Novell needs to more forcefully pull away from its proprietary software roots to win over open source supporters.

"I can't find any other companies that have ... leveraged an open source and proprietary model and been successful at making money at it," says John Enck, a vice president and research director at Gartner. "We remain skeptical on how a company can make money on open source other than services and maintenance."

At the start of last year, CEO Jack Messman said the company's acquisition of SuSE Linux would help turn Novell around within two years. But with those two years almost up, the company continues to struggle. In the third quarter, Novell reported revenue of \$290 million, down 5% from the \$304 million it posted in the year-earlier quarter. Earnings plummeted 90% over that period. And earlier this month, Novell said it was slashing its 5,800-person workforce by 10%.

Novell declined requests for interviews, but in published reports Messman has dismissed the flagging third-quarter numbers as a "one-time glitch" and has said the company's Linux strategy is on track.

Still, the company has struggled when it could be cashing in on an

See Novell, page 16

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The lighter side

Find out who was funnier at CA World, Jerry Seinfeld or John Swainson.

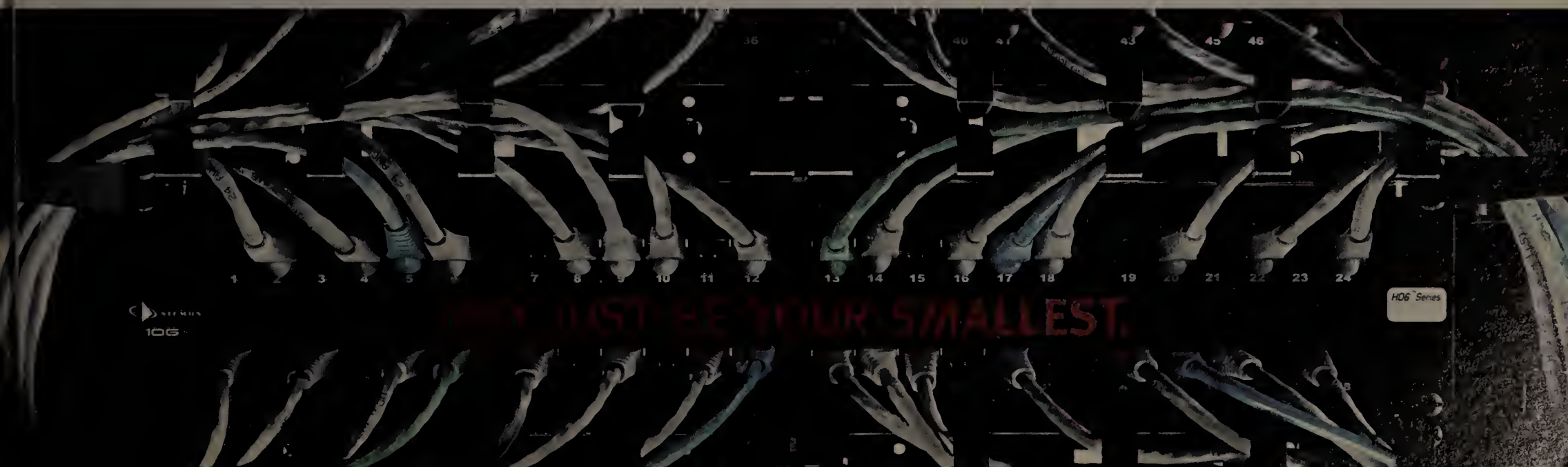
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H06 Series

New IBM unit targets data mgmt.

BY ANN BEDNARZ

IBM's \$15 billion software division last week unveiled a newly formed business unit, made an acquisition and gave a sneak peek at an upcoming database product.

The new business unit is devoted to master data management (MDM), a term IBM uses to describe its platform of information integration wares. The products have a common purpose: to help companies gain control of the scads of data sources scattered across their systems. Combined, they can move data among systems, clean and synchronize data sources, and compile contextual snapshots of customers and products.

"The vision is to provide a single view of information about customers, products, suppliers, locations, employees — every core piece of information that companies have — and to make sure that all the stakeholders in a business are using this information in the same way," says Dan Drucker,

director of enterprise data solutions at IBM.

The MDM lineup features newly revised product information-management and customer data-integration software products — WebSphere Product Center and WebSphere Customer Center. They are designed to give companies a single view of customers, products and related data. Another product, WebSphere Metadata Server, due to ship in the spring of 2006, is designed to allow metadata to be more easily managed, accessed and shared across heterogeneous systems.

IBM doesn't expect its customers to buy the entire stack at once. Rather, implementations typically will focus on solving a particular business problem, Drucker says. In product-centric industries such as retail and manufacturing, companies tend to try to organize product-related master data, while services-oriented industries such as banking and insurance tend to look to first resolve customer data-integration issues.

Big Blue's fab five

IBM acquired five companies within the last two years to flesh out its data management plans.

Company bought	Specialty	Acquisition completed
DWI	Customer data integration	September 2005
Ascential Software	Data integration	May 2005
SRD	Identity analysis	January 2005
Venetica	Unstructured content integration	October 2004
Trigo Technologies	Product information management	April 2004

As companies build out their master data-management systems, data becomes available for a host of uses. "It can feed your e-commerce site, or a series of composite applications that you've built, or your print requirements, or a self-service customer portal on the Internet," Drucker says. "It's about reuseability and making sure that all the different systems in a company understand data in the same way."

Organizing the MDM lineup is an integration feat in itself. IBM's vision relies on technologies

gained in five acquisitions completed since spring of last year. The deal-making started with the purchase of Trigo Technologies, which makes product information-management middleware.

On the tools side, IBM's purchase of Venetica added technology for dealing with unstructured content, such as images and catalogs, while the Ascential Software purchase brought core tools for moving and synchronizing data among repositories. On the analysis front, SRD's identity-resolution software helps companies discover non-obvious relationships among their customers, while DWL's technology helps consolidate customer data from multiple enterprise repositories.

IBM is committing 1,000 employees to the MDM unit — which is going after a market that IDC estimates will be a \$10 billion software and services opportunity by 2009, Drucker says.

New deals

While the WebSphere team was making its information integration pitch last week, IBM's Tivoli systems management team announced the purchase of Collation, which makes application resource-mapping software, for an undisclosed amount.

Collation's flagship Confignia software is designed to map interdependencies among IT resources so staff can more easily discover the source of application performance problems. It captures information about databases, switches, routers, load balancers, Web servers and application servers that comprise an application environment, then records configuration parameters and tracks changes.

The idea is to help IT staff

understand the effect of changes to an IT environment, such as how installing a security patch or upgrading a business application could trigger a series of unexpected problems. The combination of Collation's software and IBM's Tivoli systems management products will let customers model what will happen when an IT change is made, as well as test their environments for unauthorized changes, IBM says.

Application management is particularly important as more companies deploy composite application environments and virtualized infrastructures, according to Jasmine Noel, a principal analyst at research firm Ptak, Noel & Associates. The combination creates a dynamic environment that magnifies the need for application management.

"Application managers cannot know with any certainty what the runtime application composition looks like unless it is actually discovered from the production environment," Noel says. "Understanding the dependencies between application components running on virtualized hardware across a distributed network to deliver a single service transaction is what IBM gets with the Collation acquisition."

The acquisition also strengthens IBM's configuration-management database lineup, and helps close the gap between IBM and BMC Software, Noel says.

Finally, on the database front, IBM gave a sneak peek of the next DB2 product, code-named Viper, which is entering beta testing. Robert Picciano, vice president of database servers for IBM, previewed Viper at last week's XML 2005 Conference in Atlanta.

Key to the new release is a native XML store that will let users manage conventional relational data and XML data without requiring the XML data to be reformatted. Nor will developers have to duplicate efforts to create applications that can access relational data and XML repositories, IBM says.

Also new to Viper is support for XQuery, a standard language that uses XML to express queries across diverse data sources, including structured and semi-structured documents, relational databases and object repositories. ■

Mesh nets offer challenges

BY JOHN COX

Though a late entry, Cisco's first wireless LAN mesh product will throw fuel on an already hot market.

Wireless mesh networks based on the IEEE 802.11 standards offer a range of benefits, such as fast deployment, minimal cabling, unlicensed spectrum and broadband throughput rates over wide areas. Mesh promises to make 802.11-based data and voice services pervasive and affordable, at least in campus and metropolitan-area deployments.

Those benefits are persuading a variety of customers to adopt mesh topologies: police and fire departments; campuses; construction companies; utilities; and, increasingly, local governments for business and residential Internet access.

Cisco is throwing the Aironet 1500 into a highly competitive and lucrative market. So far, a pack of upstarts, including BelAir, Firetide, Strix and Tropos Networks, and one established vendor, Nortel, have had the market to themselves, offering an array of architectures and technologies. Other companies such as Motorola, which acquired MeshNetworks, offer proprietary wireless mesh products. The 1500 makes Cisco a major player in this market.

"It appears to be a very competitive product," says Craig Mathias, principal with Farpoint Group, a wireless consulting company. "And it does have 'Cisco' on the front label."

A study from ABI Research estimates the global market for

802.11 mesh products to be \$116 million and that it will soar to \$1.3 billion five years from now. Much of that will be spent by municipalities or service providers to offer low-cost wireless Internet access, says Sam Lucero, ABI senior analyst.

"Mesh is attractive because of its [low] cost and ease of deployment," Lucero says. Outdoor mesh access points cost \$2,000 to \$6,000, with an average price of \$3,000; roughly 20 nodes are needed to cover 1 square mile, he says.

"But this is much more cost-effective than trying to trench new fiber or cable along the streets," he says. "And in some cases, [mesh] is the only way to supply these services." Laying fiber can cost up to \$150,000 per linear mile, according to Lucero.

Mesh networks can start with just the barest number of nodes needed to blanket a given area, Mathias says. As users and traffic increase, more nodes can be installed. Costs are held down because you don't have to provide a wired backhaul connection to each node: traffic from clients can hop through several wireless nodes (which sometimes can draw power from a battery or solar cell without needing an electrical connection) to reach a gateway that links with the wired network.

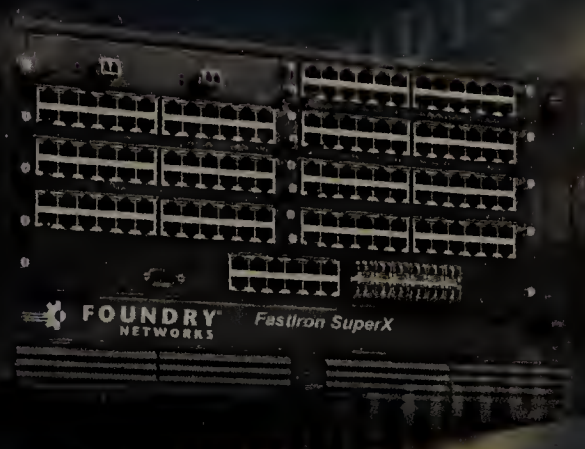
But there is very little that's standard in mesh products.

"There are so many differences in products and approaches," Mathias says. "The secret sauce is

See Mesh, page 18

► Read more about Cisco's wireless plans. Page 23

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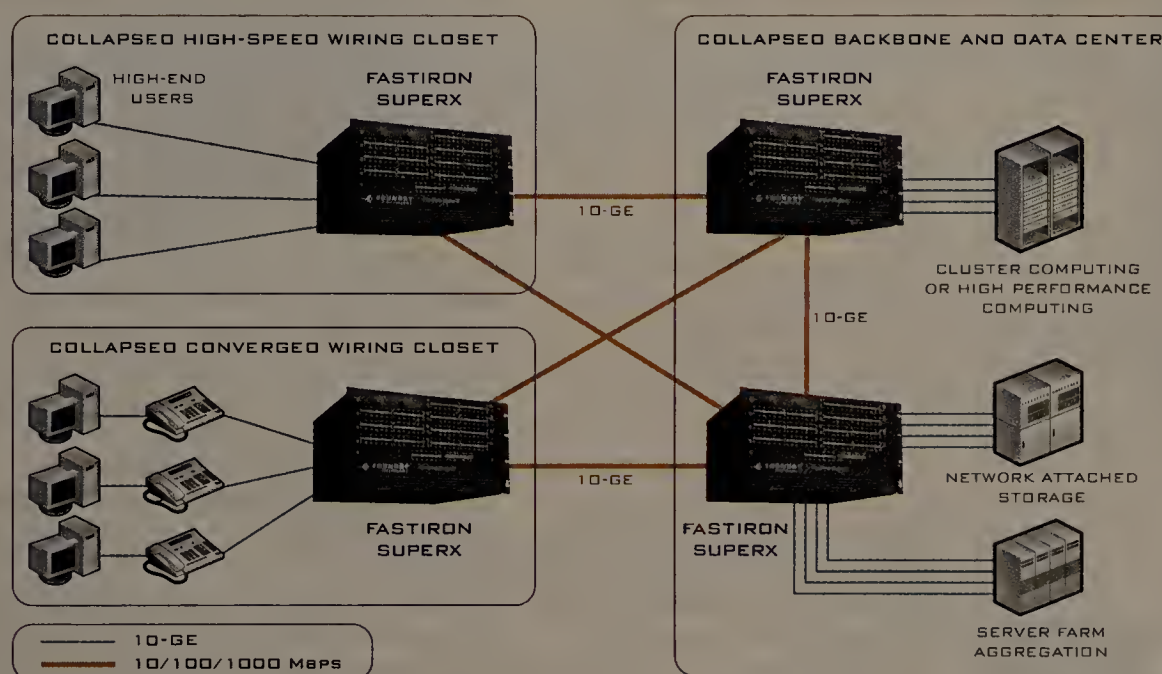
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Juniper, others make security buyouts

BY PHIL HOCHMUTH
AND TIM GREENE

Network hardware companies continue to snap up technology they can use to make security a standard feature in the switches and routers that comprise the basic network plumbing inside businesses.

The trend continued last week as Juniper Networks grabbed security vendor Funk Software for \$122 million. Citrix Systems then bought its way into the application firewall market by acquiring start-up Teros, and Force10 Networks acquired stealthy intrusion-prevention, intrusion-detection system (IPS/IDS) vendor MetaNetworks.

"You can't separate security from infrastructure anymore," says Lawrence Orans, principal analyst with Gartner. "When the present batch of network infrastructure gear on the market was on the drawing board, it was before Blaster and Sasser and heavy-duty malware and worm threats. You now need to have infrastructure that can quickly maintain your network through worm storms and other forms of malware attacks."

Last week's security acquisition trifecta follows 12 months of buyouts where Cisco acquired six security vendors, 3Com acquired IDS/IPS stalwart TippingPoint Technologies (read more on 3Com's integration of TippingPoint security products, page 23), Juniper bought application security firm Peribit and Citrix bought SSL VPN vendor Net6.

More evidence of network gear assimilating security features can be found by following the money. Infonetics Research reports that third quarter of 2005 sales of secure routers, which consist of WAN routers with VPN/firewall features, jumped 21% from the previous quarter, while the overall router market grew at just 8% (\$859 million for the quarter). Of

the \$189 million in sales of Layer 4-7 switches last quarter, half came from switches with built-in SSL features (www.networkworld.com, DocFinder: 9854).

Switching on security

Juniper's buyout of Funk is in an effort to add switch-port enforcement of policies as an option in Juniper's Unified Access Control (UAC) scheme. UAC verifies that computers meet security policies before they gain network access and that users can reach only those resources for which they have been authorized.

UAC supports policy enforcement using Juniper Layer 3 firewalls placed around the network at strategic points. By using 802.1X authentication supported by Funk products, Juniper will be able to enforce security policies at Layer 2. So if users try to access resources without authorization or if their machine fails a security scan, they can be stopped at the access switch or redirected to isolated virtual LANs.

While Juniper's first move was at Layer 3, "we intended all along ... to provide an option to use existing switching infrastructure that supported Layer 2 enforcement points," says Hitesh Sheth, Juniper's vice president of enterprise products and solutions.

Layer 2 enforcement is the cornerstone of Cisco's latest version of its Network Admission Control (NAC) enforcement, as well as Microsoft's Network Access Protection (NAP) in cooperation with switch vendors. These methods use a mix of software and switch hardware to detect dangerous clients and close network access at the LAN-port level (DocFinder: 9855).

Juniper lacks access switches in its product line. That had been a criticism of its access-control plan, because Layer 2 enforcement would require cooperation of switch vendors, which would be unlikely in the case of Cisco.

Instead, Juniper is pursuing a standards-based means to impose policies via switches. Funk paves the way with its 802.1X support and its support for standards being developed by the Trusted Computing Group industry association that is working on open interfaces to support secure con-

Securing security

Network infrastructure vendors went on a security buying spree last week.

Company	Acquired	Technology gained	Price
Juniper	Funk Software	Network authentication, RADIUS, 802.1X software	\$122 million
Citrix	Teros	Application firewall, XML traffic inspection	Undisclosed
Force 10	MetaNetworks	10G bit/sec IDS/IPS security hardware	Undisclosed

nections to networks, among other projects.

"Most people have a more pervasive switch architecture than they do a security infrastructure, so it makes sense to try to leverage that," says Rob Whiteley, an analyst with Forrester Research.

The drawback is that many businesses have not upgraded to switches that support 802.1X, so they cannot use the Layer 2 option until they do so. The expense and disruption of upgrading switches has been a criticism of Cisco's NAC initiative. Juniper can offer customers Layer 3 enforcement by overlaying protection on existing networks until customers upgrade

to 802.1X switches.

Firewall smarts

With its buy of Teros, Citrix gets the start-up's Security Application Gateway, a software-based security appliance that the company says can block attacks against corporate Web-based applications. The application firewall inspects HTTP and XML traffic streams for suspicious activity and unauthorized protocol schemas, and can block or filter such attacks.

This XML inspection and security capability will be rolled into NetScaler's line of application acceleration switches, according to Wes Wasson, vice president of

marketing, Application Networking Group, Citrix. In addition to securing XML traffic, he says, the Teros technology also could be used in the future on Citrix NetScaler switches to accelerate and optimize XML applications.

The Teros buy also brings Citrix up to speed with top rival F5 Networks, which acquired application firewall vendor Magnifire for \$29 million last year, as well as other application acceleration/firewall vendors, such as NetContinuum.

As for Force10's acquisition of MetaNetworks, the deal will give the 10G Ethernet switch start-up its first IPS/IDS capabilities, which it will offer as an appliance, and later build into its 10G Ethernet switches. MetaNetwork's Web site says its security hardware can perform stateful firewall packet inspection and IDS/IPS capabilities on 10G bit/sec traffic streams without slowing packets. The gear is used in government deployments for securing high-speed networks, the company and Force10 say. ■

Microsoft

continued from page 7

what it takes," says Nelson Ruest, a consultant and systems integrator with Resolutions Enterprises in Victoria, British Columbia. "In terms of Exchange 12, they can break memory barriers, they can break TCP/IP barriers in terms of the number of connections. It's more stable, more performance and better power."

The message is a good one, but users are not ready to abandon their 32-bit platforms.

"We do not have a 64-bit strategy yet," says Will Nelson, COO for Compass Health in Mount Vernon, Wash. He says the company will take cues from its services partner Azaleos, which provides the health-care company with a preconfigured appliance running Exchange and remote management services. "With Azaleos there would be a lot of coordination with them in moving to that platform."

Some analysts say early adopters will be those who are desperate to step up their server and application performance.

"Unless customers have a business need, say they need more scalability out of a database or they have a process-intensive application, they are better staying on 32 bit," says Al Gillen, an analyst with IDC.

He says customers will buy 64-bit hardware because that is becoming the norm, but it is likely users won't go to a 64-bit Windows operating system until Longhorn R2, which is expected to ship in 2009.

Today, 64-bit versions of the Windows Server operating system account for only 0.1% of Microsoft sales, IDC says. Microsoft shipped 64-bit Windows Server

2003 for Itanium-based Systems in April 2003 and Windows Server 2003 x64 Editions in April 2005. IDC projects new server licenses for 64-bit Windows operating systems will spike in 2007 at about 35% and then climb to 52% and 63% in 2008 and 2009.

"With our road map, we have a 'ready when you are' approach," says Samm DiStasio, director of product management for the Windows Server division. "But we are trying to articulate when 64 bit happens in the various products because that is where you get the most bang for the buck."

In addition to its future platforms, Microsoft says it is releasing an IT-centric version of its desktop search tool that gives IT the ability to deploy the software using Microsoft System Management Server or third-party deployment tools. The search engine, which works locally and across intranets and the Internet, integrates with e-mail, Office and SharePoint Portal Server. Users also can write custom filters to get at other data sources.

Microsoft also says Virtual Server 2005 R2 will be available in six to eight weeks, with the price for the Standard Edition dropping from \$499 to \$99 and the Enterprise Edition from \$999 to \$199. Microsoft is facing sharp competition in the virtual server market from established leader VMware and others such as Swsoft, which last week began shipping Version 3.5 of its Virtuozzo server for Windows with a price starting at \$1,000 per CPU.

Microsoft also says it will ship early next year a modeling tool called Capacity Planner, designed to help with rolling out Exchange and Microsoft's Operations Manager. ■

nww.com

Security trends

Read Gartner Analyst Lawrence Orans' breakdown of the latest security product trends.

DocFinder: 9857



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_DAY 4: My data has a life of its own. I can't control it. I can't manage it. I can't...get out.

_DAY 5: I called for help. I tapped out a distress signal with an allen wrench. Do the guys upstairs know Morse code?

Open source IP PBXs make strides, have far to go

BY TIM GREENE

Purveyors of inexpensive open source IP PBXs last are upgrading their software to include better integration with traditional circuit-switched phone networks, which could encourage larger deployments.

The two notable open source IP PBX platforms, Asterisk and sipX, initially were meant to provide VoIP support to hundreds of phones, but certain implementations have reached thousands, vendors of the products say.

For example, Digium, which commercializes the Asterisk IP PBX, has sold its software to the city of Manchester, Conn., to support 1,500 phones for schools, police, fire and administrative

the VoIP PBX market, according to IDC.

Avaya, Cisco and Nortel command most of the market, which IDC says hit \$4.3 billion worldwide last year. The open source vendors sold so few that they didn't register on the IDC surveys.

The platforms' developers are making strides enhancing their basic code.

Digium has improved Asterisk's call-server clustering and voice mail support (see www.networkworld.com, DocFinder: 9857), and SIPfoundry has upgraded its sipX PBX software to act as a routing engine for SIP signaling, which means third-party applications such as conference bridges and

big-name vendors charge.

While the savings are attractive, going with little-known companies can be risky, says Nora Freedman, an analyst with IDC. Most large businesses will avoid open source when building a VoIP infrastructure, she says, because it is a dangerous enough career move to try VoIP let alone use an open source platform or a platform with a relatively unknown vendor supporting it. "Free or cheap is only good for consumers and small and medium companies that can afford to take the risk," she says.

It is much safer to go with a big name. For instance, Cisco not only has an IP PBX, it also supplies switches and routers, so if there is a VoIP problem linked to the network, Cisco can handle it. If a business uses one vendor for the IP PBX and another for its network equipment, fixing such problems becomes harder, Freedman says, and there is a greater chance of long outages. "People are putting their jobs on the line switching over to VoIP. They want to have a credible vendor behind them."

But if a large business with programming resources was willing to take the risk, open source PBX code could mean faster development of features specific to its needs. "They could write custom applications to improve business processes," Freedman says. "With a bigger vendor, you have to work with the vendor or bring in a third party to write new applications. If you're a company with Cisco PBXs, you don't have access to Cisco Skinny [call-control] code," she says.

Telesthetics, a service provider in Rochester, Mich., uses Digium's IP PBX to support voice services to business customers, and with in-house staff can support custom applications.

Telesthetics provisioned the platform to take incoming calls for a medical company and forward them to extensions based on the project code, says John Ludden, director of operations for the provider. "You can create just about any application you want," he says. ■

Ups and downs of open source PBXs

While readily available IP PBX software from the open source community can offer benefits to businesses, it can pose concerns that are not an issue with commercial IP phone platforms.

Pros

Free or low cost.

Extensible for custom application development.

Ongoing development by open source community.

Cons

No support.

May require work to integrate with other network elements.

Lacks sophisticated management tools.

offices, says Mark Spencer, president of Digium and the creator of Asterisk.

Similarly, a Fortune 50 company is putting in a 2,800-phone SIP-foundry network because it represents a pure Session Initiation Protocol (SIP) implementation, says Al Brisard, vice president of marketing of PingTel, which sells a commercial version of SIP-foundry. He declined to identify the user.

"Traditional vendors of PBXs have a couple of features based on SIP but other features may be proprietary," he says.

AOL and EarthLink also use PingTel's PBX to support residential VoIP services.

Despite customers' interest in deploying larger numbers of IP phones from these open source platforms, vendors are still struggling to increase sales in

automatic call distributors can be readily added to it.

Digium and PingTel use similar business models. They add features to the basic open source PBX software and sell it packaged to businesses and provide support. Customers can get the base software free, but they have to get it up and running and maintain it themselves.

The big attraction is price. In the case of Manchester, Cisco bid \$1.2 million to install the city's new phone equipment, and Digium won the contract with a bid of \$400,000, says Ron Dutt, president of Softel, the Old Ridge, N.J., integrator that installed the system. That included a network upgrade to Power over Ethernet to support the IP phones and custom applications.

Brisard says PingTel IP PBX systems cost one-third the price the

Novell

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exploding Linux market. Linux servers posted their 12th consecutive quarter of double-digit growth in the second quarter of this year, with revenue growing 45% compared with the same period a year ago, according to IDC. By contrast, Microsoft Windows Server revenue grew 14%.

Maybe more troubling for Novell is that Red Hat, about a tenth of its size, is thriving. Credit Suisse First Boston says Red Hat holds nearly two-thirds of the Linux market, while SuSE's share is hovering around 20%.

Not that Novell's financial picture is completely bleak: the company has \$1.6 billion in the bank. But financial and industry analysts were unsettled enough by the third-quarter results to call for management changes as a way to right Novell's course.

The issue is that Novell is having a tough time articulating a strategy that involves a tricky balancing act of selling both proprietary and open source software, analysts say.

Next week's financial results will shed more light on how Novell's transition is going, but regardless of those results, analysts and users say the company needs to more fully embrace the idea of open source. The software maker bundled its classic NetWare services with SuSE Linux earlier this year, but hasn't fully made the open source leap.

Novell executives say they're bringing value to Linux "up the stack from the kernel" with services such as identity management, security and systems management. Red Hat is taking the same path, but submitting those add-ons — such as the directory services it acquired from Netscape — into the open source community under the General Public License.

"After spending a significant amount of money to acquire [Linux desktop and server company] Ximian and SuSE, it chose to bury the technologies and the opportunity it acquired under a flood of its traditional products," says Michael Goulde, an analyst at Forrester Research. "Certainly, a new strategy is required focusing on the complete application platform."

Novell's approach to open source hasn't gone unnoticed by customers. Jim Klein, director of information services and technology at the Saugus Union School District in California, for example, is a long-time NetWare user and was co-owner of a Novell reseller before taking his current position 10 years ago. But when he decided to migrate his 52 NetWare servers to Linux early last year, he opted for Red Hat.

"Ironically, when Novell bought SuSE and committed to Linux, it legitimized the platform for us and caused us to look at it more seriously," Klein says. But after reviewing both Red Hat and Novell, "ultimately it came down to who was a true open source company."

"Novell was, and is still, layering their proprietary software on top of Linux, which was — and appears to still be — their primary focus," Klein says. "Once someone becomes committed to the modularity of the open source model, the Novell way of doing things doesn't match up."

The problem is that while the primary tenet of the open source community is to build applications on open standards to allow interoperability, Novell closely links its open source offerings to its proprietary software, he says.

"Novell solutions, while they support open standard connections to a certain extent, rely on each other to function, rather than operating independently. GroupWise won't work without [Novell Directory Services], which [management software] ZENworks also requires," he says.

What Novell needs to do is "become more a pure-play open source company," Klein says. "All of their products should operate independently of each other but complement each other, and drop easily into an enterprise environment, with full support for open standards and integration with non-Novell solutions."

It's that kind of corporate reinvention that seems to be driving Novell's latest restructuring efforts, analysts say. "Novell is trying to reshape the company in a big way," Enck says. "They are ... doing this with a real goal of moving forward and making some money on Linux, identity and resource management." ■

nww.com

Behind the departures

Columnist Dave Kearns speculates on why Hubert Mantel left Novell.

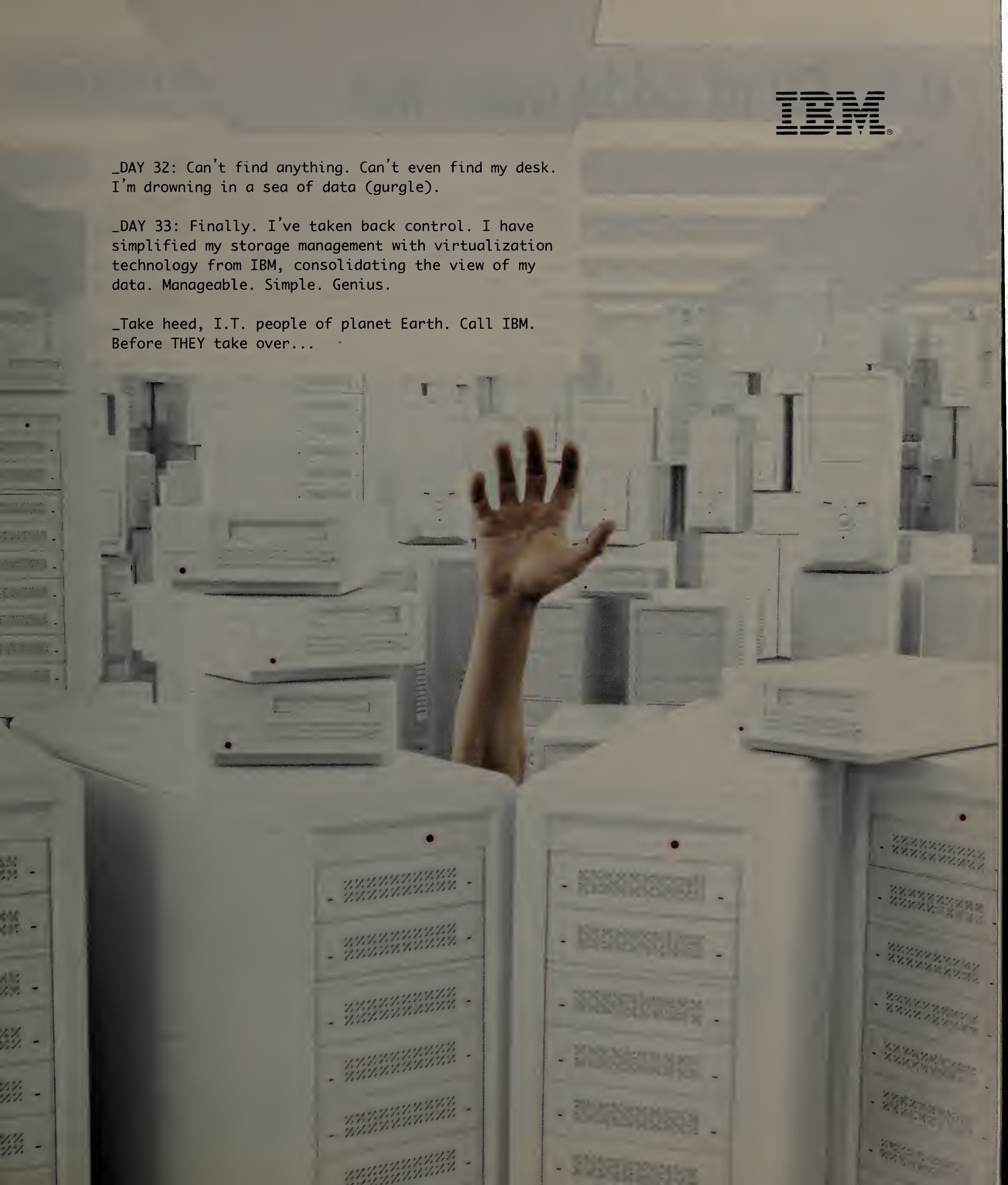
DocFinder: 9858



_DAY 32: Can't find anything. Can't even find my desk.
I'm drowning in a sea of data (gurgle).

_DAY 33: Finally. I've taken back control. I have
simplified my storage management with virtualization
technology from IBM, consolidating the view of my
data. Manageable. Simple. Genius.

_Take heed, I.T. people of planet Earth. Call IBM.
Before THEY take over...



U.S., EU at odds over 'Net

BY JOHN BLAU,
IDG NEWS SERVICE

TUNIS, Tunisia — Both the United States and the European Union are claiming victory in an agreement reached last week over Internet governance, one of the most contentious issues being debated at the World Summit on the Information Society.

The problem is that the parties are at opposite ends of the Internet-governance debate. While the United States interprets the agreement as giving it continued control over the Internet's core components, including its addressing systems, the EU reads it as opening the door for Internet oversight

to be shared by governments of the world.

"The document is fabulous," said David Gross, ambassador for the Bureau of Economic and Business Affairs at the U.S. Department of State and the person leading the U.S. delegation. "There were proposals to create a governmental organization that might control many technical aspects of the Internet and, through this, content as well. This is now off the table. There is no change to the U.S. role, no change to [the Internet Corporation for Assigned Names and Numbers]."

Gross warned that opening the process to intergovernmental

oversight could weigh down the Internet with bureaucracy and stifle innovation.

The only change that Gross acknowledged was an agreement to create a forum to discuss issues such as cybercrime and spam. But he pointed out that the "forum will play no role in oversight."

As the EU sees it, however, the United States has consented to consider a new oversight body by agreeing to the "enhanced cooperation" wording in the document approved by delegates in the Internet governance group, said Martin Selmayr, a spokesman for EU Information Society Commissioner Viviane

Reding. "The role of ICANN shouldn't change, but what has to change is the oversight role," he said. The EU and other countries are demanding "oversight in cooperation and on equal footing," he added.

There is concern that a stalemate in the talks over 'Net governance could result in governments breaking away to launch their own root file systems for managing IP traffic that, in the worst-case scenario, are not interconnected and interoperable; this could lead to a fragmentation of the Internet and a possible breakdown in global data communications.

Countries including China, Brazil and Russia lobbied intensively at the first summit in Geneva two years ago for changes to the current system. The EU, which had initially supported the U.S. position, made a surprise turnabout in September, when it agreed to the need for more governmental participation.

How do others interpret the agreement? Robert Shaw, Internet strategy and policy adviser at the International Telecommunication Union, points to powerful wording in the document that suggests a dramatic change — if not an end — to the dominant U.S. role in the Internet. "There are several paragraphs that call for changes in the way the Internet is governed today," Shaw said. "And the U.S. has agreed to these. That's a fact."

For instance, countries should be involved in decisions regarding their own top-level domain. "This is a definite change over the present situation," Shaw said.

The document also recognizes that all governments should have "an equal role and responsibility for Internet governance and for ensuring the stability, security and continuity of the Internet" and a role in the development of "globally applicable principles on public-policy issues associated with the coordination and management of critical Internet resources."

The agreement also calls for the U.N. Secretary-General to initiate a process by the first quarter of 2006 to create "enhanced cooperation," or what the EU views as the seed for a new oversight body. ■

Mesh

continued from page 12

the mesh-routing protocol. And everyone implements them differently. Under what conditions do you hop [from one node to another], and to which nodes? How do you actually route packets through the mesh? All these are answered differently."

Some products, notably from Tropos, use a single radio to handle client and backhaul connections. Cisco and others use separate radios for each connection. Some vendors will use two or more radios for both tasks. "Should you use multiple radios or not? And if yes, how many?" Mathias asks. "No one to my knowledge has done comprehensive tests of these products ... to give us comprehensive benchmarks."

The department of electrical engineering and computer sciences at the University of California at Berkeley is a beta site for the Aironet 1500. The department has 10 nodes deployed around the university's campus, which has hundreds of buildings.

This deployment proved an unexpected challenge, says network manager Fred Archibald. Access points are designed for mounting on the horizontal arms of municipal light poles. But few of these were on campus. "We mounted them on roofs, about 70 to 90 feet above the ground," Archibald says. "We had to use specialized directional antennas to get the signal back down to the ground."

There was more interference than expected in the

802.11 5-GHz band Cisco uses to link the nodes, Archibald says. The interference was apparently caused by the large number of wireless research projects at the engineering school, he says.

The 1500 nodes are divided into groups, each of which is assigned its own radio channel, optimizing throughput for users and nodes in each group. But that means fewer routing options for the nodes in each group in case of outages or interference, Archibald says. "The mesh is not as flexible in reconfiguring itself," he says. "Cisco has told me they will get better in this in the future."

Troubleshooting is more complicated in a mesh. "The route [for a client's packets] is more complex, and it's constantly changing," he says. One major upgrade during the beta test was the introduction of a GUI for the network-monitoring software. The display can now show a network administrator the path that a client packet has taken through a mesh.

Finally, the beta test revealed wide differences in how 802.11 client adapters cope with variable signal-to-noise ratios (SNR) that can occur outdoors. "Some don't respond if the SNR is not as 'friendly' outdoors," Archibald says. "Some are rock solid."

Mathias doesn't expect mesh networks to take over in carpeted offices. "But there are plenty of cases where you don't have any wiring, such as loading docks or warehouses; concrete, not carpeted sites," he says, "and campus nets where you have a hybrid of outdoor and indoor wireless." ■

Mixed meshes

Mesh vendors offer a wide array of features and approaches for outdoor WLAN access points.

Vendor	Product	Radios for client access	Radios for backhaul	Ethernet ports
BelAir Networks	BelAir 200	1 802.11b/g	Up to 3 proprietary 5GHz	Eight
Cisco	Aironet 1500	1 802.11b/g	1 802.11a	Zero
Firetide	HotPort 3203	1 802.11a/b/g	Same as for client access	Two
Nortel	Wireless AP 7220	1 802.11b	1 802.11a	One
Strix Systems	OWS 3600	Up to 3 802.11b/g	Up to 3 802.11a	One
Tropos Networks	5210 MetroMesh Router	1 802.11b/g	Same as for client access	One

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Oracle bulks up on identity software

BY JOHN FONTANA

Oracle last week put the final pieces into place for its identity-management suite. Customers say the task now is integrating all the parts.

Oracle, which started piecing together the suite in 2004, last week capped off a string of acquisitions with the purchase of Thor Technologies, which develops provisioning software, and Octet-String, a vendor of virtual directory technology. The terms of the deals were not disclosed. Earlier this year, Oracle bought Oblix and its Web-access management and provisioning software, and in 2004 it bought Phaos, which developed identity-federation technology.

Oracle intends to provide customers, who are being driven to identity management by federal regulations such as the Sarbanes-Oxley Act, with a suite of identity software for such tasks as creating and managing identities, and sharpening access controls. Oracle plans to align its identity platform with its business applications, another area where the company has been growing by acquisition.

Users say they are aware Oracle has a challenge ahead.

"They certainly have all the pieces [for an identity suite], but the ability to effectively integrate is yet to be seen," says a network architect with a Fortune 500 company that runs Oracle, Oblix and

Acquisition scorecard

The identity market has been constricting over the past years, with most of the major vendors acquiring technologies to build suites of software focused on identity management.

Vendor	Acquisition/year	Technology
BMC	Calendra — 2005	Provisioning
	Open Networks — 2005	Web access management
CA	Netegrity/Business Layers — 2004	Web access management/Provisioning
	InfoSec (acquired technology) — 2005	Provisioning
HP	SelectAccess from Baltimore Technologies — 2003	Web access management
	TruLogica — 2004	Provisioning
IBM	Dascom — 1999	Web access management
	Access 360 — 2002	Provisioning
	MetaMerge — 2002	Meta-directory
Microsoft	Zoomit — 1999	Meta-directory
Oracle	Phaos — 2004	Federation
	Oblix/Confluent — 2005	Web access management /Federation/Web services management
	Thor — 2005	Provisioning
	Octet String — 2005	Virtual directory
RSA	Securant — 2001	Web access management
Sun	Innosoft — 2000	Directory services
	Waveset — 2003	Provisioning

Thor technologies. "Their claim is the [Business Process Execution Language] is a key to integration. Another aspect of the task is consolidation of technologies — they have significant duplication."

Oracle says Thor Xcellerate will replace Oblix CoreID provisioning software in the Oracle

Identity Management (OIM) suite, but will complement Oracle Internet Directory with OctetString Virtual Directory. In the next eight weeks, Oracle will release, certify and rebrand its newly acquired products.

In the first half of next year, OIM will be upgraded to Version 10.1.3

to include features from the new software, including compliance automation from Thor and Octet-String integration with Oracle Fusion Middleware.

With OIM 11, which likely will be released in 2007, Oracle will further deepen the integration.

"Oracle should now be consid-

ered a major player in the identity-management market," says Jonathan Penn, an analyst with Forrester Research. "The combined set of products obtained through acquisition form a [Java 2 Platform Enterprise Edition]-based portfolio that has a flexible administrative model, flexible role model, flexible data model [and] flexible connector architecture."

Penn warns that Oracle is behind competitors such as IBM and Sun, which have been acquiring identity vendors and integrating suites of products. And last week, Computer Associates shipped CA Identity Manager.

"It will not be adequate for Oracle just to try to leverage its place in the enterprise application market. Nor will it be enough to go after Oracle customers, who are also customers of Sun, IBM, or CA anyway. So there's a lot of work on messaging, marketing and visionary-type identity management ahead for Oracle," Penn says.

In parallel, Oracle will align the identity platform with its applications platform.

"As we evolve our identity-management offerings we will shift our application repository, not just for the identity data but for the identity-management function of our broader management suite," says Wynn White, senior director of Oracle identity management and security marketing. ■

Today's security officers wear many hats

BY CARA GARRETSON

WASHINGTON — Effective chief information security officers are trusted advisers to their companies, respected leaders of their technical teams and risk experts all at once — which is no small task, according to a panel of CISOs who spoke last week at the Computer Security Institute's conference.

During a keynote discussion entitled "CISO Panel: Evolving Responsibilities," five CISOs from various industries and government offered opinions on what it takes to become a CISO, how to hold on to the title and in which directions the job is heading.

The demand for a CISO function has jumped dramatically in the past few years, largely because of new security-related requirements imposed on public companies by the Sarbanes-Oxley Act, said Bill Hancock, vice president of global security solu-

tions and CSO at IT services company Savvis Communications. Because of the criminal charges that the act may impose on corporate officers who violate the law, one could say that the CISO's job is to keep management out of jail, Hancock said.

Another panelist joked that while corporate security is a cost center and its value can't be easily gauged, if ROI is defined not as return on investment but as "risk of incarceration," suddenly it seems worth funding. "Security is all about risk avoidance ... I've found it impossible to quantify," said Jennifer Bayuk, CISO and managing director with financial services firm Bear Stearns.

The panelists agreed it's getting easier to sell the need for security to both company executives and customers, as breaches have become headlines since a California law took effect this year. That law forces

companies doing business in the state to disclose when an event occurs that could lead to theft of personal data.

While the need for security must be stressed, so should the reality that there's no such thing as 100% security, said Jack Jones, CISO of Nationwide Insurance. "If perfect security isn't achievable, then we're managing the frequency and magnitude of loss. ... We have to become experts at risk," he said.

Experts manage risk, don't take risks, Jones added, which is why the CISO position is not typically a path to the corner office. "CEOs have to have a high tolerance for risk. I find I'm risk-averse," he said.

Yet some CISOs are finding that managing risk and understanding the company's business means they are asked for help by many departments. Meanwhile, CISOs need to keep up-to-date with technology to

manage effectively. They must be "technical enough so you're not snowed, but have enough management [skills] that you can fit in and talk to business folks," said Jane Scott Norris, CISO with the U.S. Department of State.

Another key skill for CISOs is to understand auditing and use it to their favor. "If you can't demonstrate that you're secure, it doesn't count," Bayuk said. ■

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Security update

Follow the week's news from the Computer Security Institute's conference.

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Deploying VoIP Successfully in Your Organization

A Solution for the Entire VoIP Lifecycle.

In today's competitive environment, many organizations are turning to VoIP (Voice over Internet Protocol) as a way to cut costs, boost productivity, and increase their competitive advantage. In fact, more than 70 percent of organizations now use VoIP in some capacity.* However, VoIP systems present some special IT challenges. First, because end users expect IP phones to work as reliably as land lines, VoIP systems must meet exceptionally high quality and performance standards. Second, even if the system works fine initially, later network changes could affect call quality – or a growing VoIP system could affect other mission-critical applications. So to minimize problems, you need to verify before deployment that your infrastructure can support VoIP; thoroughly examine all system elements during deployment; and manage your VoIP system proactively after deployment, including ongoing monitoring, troubleshooting, and planning for future growth.

Pre-deployment/deployment

Before deployment, Fluke Networks tools help you qualify your cabling infrastructure to make sure it can support VoIP. For example, NetTool VoIP enables you to verify Ethernet connectivity, speed, Power over Ethernet (PoE), VLAN and port configuration for each link, and more. In addition, during deployment, NetTool VoIP verifies that the IP phone and network can communicate.

Ongoing monitoring and management

After deployment, you need to monitor bandwidth usage and QoS (quality of service) for both the VoIP system and the network as a whole, quickly determine the source of any degradation, and fix it. OptiView Protocol Expert and Link Analyzer monitor bandwidth utilization and generate alarms when QoS thresholds are exceeded. ReporterAnalyzer provides a combination of real-time insight and long-term data analysis, helping to identify the VoIP system's role in traffic volume and prioritization as well as call pathways used. The OptiView Integrated Network Analyzer isolates call setup problems at different locations on the network; and WAN Analyzer sits outside the router and monitors all inbound and outbound traffic for an entire interface or location.

Troubleshooting

The network's edge is a good place to start troubleshooting, and NetTool VoIP is the ideal tool, showing communication details between the IP phone and call server. If no problem exists there, Protocol Expert and Link Analyzer provide more in-depth troubleshooting, generating real-time QoS analysis to quantify and isolate the degradation, plus packet analysis to uncover configuration problems. In addition, Integrated Network Analyzer** shows detailed VoIP information for every call captured. With these tools, you can identify both single-user problems and those propagated among many users.

Planning for future growth

Many organizations deploy VoIP in batches, starting with a pilot program and then rolling it out more extensively. Studying trend and baseline data from your current system will help you determine whether you have enough capacity to handle growth or need to add new resources. ReporterAnalyzer provides capacity planning information and shows the rate at which VoIP traffic volume has grown over time, while Protocol Expert and Link Analyzer provide a performance baseline by calculating an aggregate health score for all VoIP calls being carried over a specific link or VLAN.



A VoIP lifecycle solution

To help you with these tasks, Fluke Networks offers a comprehensive solution that enables you to manage the complete VoIP lifecycle. The solution includes:

- NetTool™ VoIP, an easy-to-use, portable tool for testing communications between the IP phone and other elements of the VoIP network, and for troubleshooting problems at the network's edge.
- OptiView™ Protocol Expert, a protocol analysis and monitoring solution that can quickly isolate and resolve problems such as slow response times.
- OptiView™ Link Analyzer, a hardware analyzer that works with Protocol Expert to report on network traffic and provides real-time packet capture and analysis, QoS metrics, and alerts.
- OptiView™ Integrated Network Analyzer, a portable analyzer that captures and analyzes voice traffic and provides QoS assessments for each call.
- OptiView™ WAN Analyzer, a multi-function analyzer that provides in-depth analysis of WAN interfaces.
- ReporterAnalyzer™, a NetFlow-based monitoring and analysis solution that provides enterprise-wide visibility into bandwidth usage.

What makes this comprehensive, single-vendor solution unique is that:

- All products offer both network and VoIP specific analytics – an essential combination, since each has a potential impact on the other.
- QoS analytics isolate statistics by channel, a more powerful approach than single-call measurements because it isolates the direction of degradation.
- All products use real-time monitoring or packet analysis, basing results on real traffic, not synthetic tests.
- The Fluke Networks solution provides end-to-end VoIP lifecycle management with differentiated measurement and analysis solutions that align to your deployment needs.

For more information

To learn more about how Fluke Networks' comprehensive VoIP lifecycle management solution can help you, visit www.flukenetworks.com/voip.

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* Network World Special Report – VoIP: Challenges, Drivers, Hurdles and Recommendations

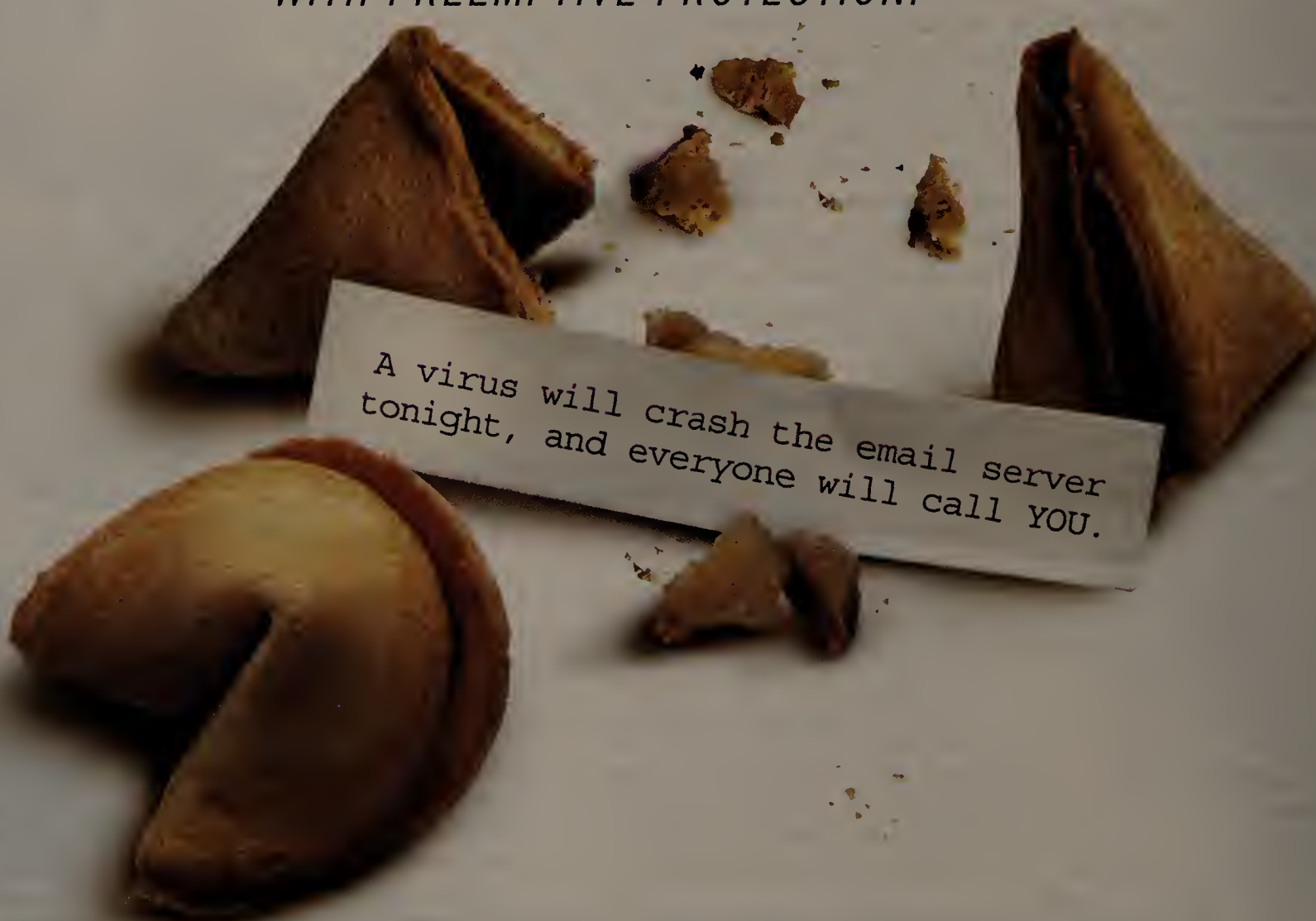
** Integrated Protocol Expert will be available on the Integrated Network Analyzer in Q4, 2005.

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Short Takes

■ Sales of enterprise **router and switch gear** grew in the third quarter, as users sought to install more secure WAN connections and faster, more intelligent LAN pipes. According to Infonetics Research, the enterprise router market grew 8% between July and September 2005, with \$859 million in worldwide revenue. Secure routers, or boxes that roll firewall, VPN and WAN connectivity into a single device, also are becoming more popular, as sales of such gear rose 21% from the previous quarter. Sales of such gear has doubled since the third quarter a year ago. Cisco dominated the enterprise router market in the third quarter, accounting for 80% of sales. Layer 2 and Layer 3 Ethernet switch sales climbed 6% in the third quarter, to \$3.95 billion. But 10G Ethernet and Layer 4-7 gear was particularly hot: 10G sales were up 29% from the previous quarter, and Layer 4-7 gear sales were up 19% from the same quarter a year ago.

■ **ServGate** last week streamlined the pricing of its multiservice security platforms so customers pay a lower flat price for the hardware and security software no matter how many users they support. When customers buy ServGate EdgeForce appliances, they get unrestricted use of anti-virus software, spam filtering, URL filtering and intrusion detection in addition to firewall and VPN support. In the past, customers would buy ServGate hardware and firewall/VPN devices and then pay extra for other security applications, as well as license fees to add users. The company's new EdgeForce 1000 appliance costs \$14,000, while a similarly configured version of its old EdgeForce Accel appliance with equal throughput cost \$16,000. ServGate also is offering new EdgeForce hardware. The five platforms are called EdgeForce M30, M100, M200, M400 and M1000. They range in throughput from 75M bit/sec to 1G bit/sec. Pricing for the new EdgeForce gear is: M30, \$1,100; M100, \$3,000; M200, \$4,000; M400, \$9,000; and M700, \$14,000.

Cisco expands WLAN product line

BY JOHN COX

New Cisco products take the next step in helping customers integrate wireless LANs with Cisco wired network gear and extending them outdoors.

Two new boards, for the Catalyst 6500 switch and the Integrated Services Router (ISR), centralize management and administration of Cisco's thin access points inside network chassis, without requiring users to install separate WLAN controllers. Also, a new outdoor mesh access point finally brings Cisco into a burgeoning market that's been dominated by rivals such as BelAir, Nortel, Strix and Tropos.

All three products, announced last week, are based on technology developed by WLAN switch vendor Airespace, acquired by Cisco earlier this year to create a wireless architecture of stripped-down access points linked to a central switch, now dubbed a controller.

The two boards are the Cisco Wireless Service Module (WiSM) for the 6500 and the Cisco Wireless LAN Controller Module



The new Cisco Aironet 1500 access point creates an outdoor 802.11 wireless mesh. In each device, one radio is dedicated to linking the access points via 802.11a, a second to connecting with 802.11b/g clients.

for the ISR. Cisco says it has sold more than 300,000 6500 boxes and over a half-million ISRs. The majority of those products can accept the new boards, according to Alan Cohen, senior director of product management for Cisco's Wireless Network Business Unit.

The new 6500 blade incorporates the guts

of a Cisco WLAN controller. Each blade delivers 8G bit/sec of throughput and can manage as many as 300 access points. By comparison, a blade introduced before the Airespace acquisition supported 150 access points. Aruba Wireless Networks, another WLAN-controller vendor, offers its high-end stand-alone 6000 Mobility Controller, which supports 8G bit/sec of throughput and as many as 512 access points.

The Cisco blade works with the companion thin access points and existing Aironet access points that have been upgraded with additional software. As many as five blades can be installed in each 6500. Each blade bundles an array of Cisco network and radio frequency-management software, including intrusion-prevention features.

But the new blade lacks true integration with the Cisco switch fabric, Cohen acknowledges. The WiSM simply shares the 6500's Supervisor module, which provides the switching fabric for the entire

See Cisco, page 26

3Com device powers up security

BY PHIL HOCHMUTH

3Com last week launched a multifunction security device that combines intrusion detection, firewall, VPN and WAN routing features in one box.

The TippingPoint X505 is the first product jointly developed by 3Com and TippingPoint since 3Com acquired the intrusion-prevention system (IPS) vendor last year. The result is a device that 3Com says can help stop malware, spyware and viruses at the enterprise edge without having to stack multiple router, firewall, VPN and IPS boxes on top of each other.

The device is a single-rack-unit device with four 10/100M bit/sec Ethernet ports, capable of supporting up to 50M bit/sec of IPS, firewall and IPSec VPN throughput, with as many as 1,000 VPN tunnels. Standard routing protocols — RIP Versions 1 and 2 and IP multicast — are supported, as well as network-address translation capabilities.

Advanced security features include URL and content filtering, and support for TippingPoint's Digital Vaccine service, which regularly updates the device with signatures and definitions for spyware, anti-

virus, and other dangerous code and attack methods, allowing users to set up blocking rules for suspicious traffic.

The four ports on the box can be configured in what TippingPoint calls security zones, which can monitor various segments of a network, such as specific virtual LANs (VLAN) and incoming traffic. Users also can use traffic-shaping features on the device to allocate certain amounts of bandwidth to users on specific security zones.

The X505 was tested recently on the network at the East Grand Rapids, Mich., public schools, where it runs as an IPS device, firewall and LAN switch, separating the school's public wireless LAN from the main network.

"So far, it's replaced three different devices," says Jeff Crawford, manager of networking and security for the school district.

Crawford says he's seen no performance issues with the device, and that managing security policies is easier now because he only has to use one device interface. He says the product brings the advanced security features of TippingPoint together with more affordable 3Com-based network gear.

"TippingPoint was always that piece that you always salivated over, but you could never afford it," Crawford says. "The thing that's always been attractive to us about 3Com is that it is affordable for school districts like ours."

One caveat Crawford sees with the X505 is that he was not able to fine-tune the IPS features to monitor specific sub-segments of his internal network — particularly, the wireless segment, which runs as its own VLAN segment. He says 3Com is working with him on the issue.

The 3Com TippingPoint X505 is scheduled to be available next month starting at \$4,000. ■

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More details

Listen to an audio file of the interview with Jeff Crawford, with more details on his beta test of the 3Com TippingPoint X505.

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TOLLY ON TECHNOLOGY
Kevin Tolly

Cisco's 'pals' offer new strategy

Whatever one might think of the technology that Cisco sells, few would argue against the company's success as a marketing machine. Stories abound in the industry about Cisco bringing in the "big guns" to sway customer executives back to Cisco after a wayward network architect recommended the competition. And, for that competition, making progress against Cisco often has been as productive as trench war-

fare in World War I — that is, not productive at all. But that might be changing.

"Introducing Cisco plus." So began a three-quarter-page ad in a recent issue of *The Wall Street Journal*. Accustomed to seeing prominent Cisco ads, I read on to see what the message would be this time around. As I scanned the top of the ad, I saw keywords you'd expect: "intelligence," "optimizes applications," "security," all above the fold, as they say in newspaper parlance.

It was only after I flipped the paper over to read the remainder that I realized it was a 3Com advertisement. Time to stop and rewind. What is going on here? Did Cisco acquire 3Com and I

failed to notice?

In fact, it appears to be a bold example of what I'm starting to call the "Friends of Cisco" competitive strategy — and 3Com isn't the only one to take this "leverage Cisco by buying from us" approach. You'll be seeing it pop up more and more from other vendors.

After the boldface Cisco opening, 3Com goes on to tout what it calls its "plus" approach — adding intelligence and more (noted above) to an existing Cisco infrastructure. Then, just below the fold, 3Com tells you what you "lose" by going with 3Com — "Minus the forklift. Minus the lock-in."

The ad ends in not-so-fine print: "Cisco ... is not affiliated with nor

does it endorse the products or services of 3Com Corp. Whoa! Big surprise [sic]. So, yes, we do compete with Cisco, but we also exist with them as an overlay to your current network." And, yes, the "Whoa! Big surprise" is 3Com's text and not an editorial addition.

To go back to the trench-warfare analogy, it is as if, rather than flying the white flag in surrender, one side just stood up and said, "Hey, why are we fighting? Let's go have lunch," and then uses that as a way to get over to the enemy in order to get access to areas behind the battle lines.

Beneath its logo, 3Com lists "security, VoIP, wireless, switching, routing, services" as areas with which it can help customers.

Whoa! (this time it's mine) — Cisco has offerings in every one of these areas too.

The message would seem to be: "Cisco: We come in peace ... to try to take your business away." It might just work.

(Disclaimer: While 3Com is a testing client of The Tolly Group, we do not provide consulting to the company. I first found out about this strategy when I picked up the *WSJ* and saw the advertisement. The Tolly Group had no connection with this effort.)

Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Boca Raton, Fla. He can be reached at ktolly@tolly.com.

Enterasys sells, goes private

BY PHIL HOCHMUTH

Enterasys Networks will become a private company, as it agreed to a \$386 million buyout offer by two private investment firms last week.

Enterasys, which makes LAN switches and routers, firewall, intrusion-detection and other network security gear, will be acquired by The Gores Group and Tennenbaum Capital Partners for \$13.92 per share.

"This transaction provides our shareholders with a substantial premium over the current market and enterprise values of the company," said Mark Aslett, president and CEO of Enterasys, in a statement. "We believe operating as a private company with the backing of Gores and Tennenbaum will enable us to capture market opportunities not available to Enterasys today."

Aslett and the Enterasys management team will remain in charge of the network company. The deal is expected to close by year-end.

Tennenbaum Capital Partners has more than \$3.7 billion under management. The Gores Group manages 13 software and other technology companies. In 2002 it bought Enterasys' network management arm, Aprisma Management Technologies, and sold it in January to Concord Communications — now a Computer Associates company. Gores acquired and sold off other network vendors and other technology companies over the last several years.

Enterasys' products compete with offerings from vendors such as 3Com, Cisco, Extreme Networks, Foundry Networks, HP ProCurve, Nortel and Force10.

Enterasys struggled the last few quarters, with its net losses growing from \$5.8 million in September 2004 to \$23.6 million in June 2005. It posted a major upswing in September, with \$72.9 million in net income on \$81.8 million in sales. Since August, the company's share price has risen from as low as \$1 to \$13.25 at the close of the market last Wednesday. ■

McAfee unveils anti-spyware wares

BY ELLEN MESSMER

McAfee last week unveiled anti-spyware software for business customers to block and eliminate adware, dialers, keyloggers, cookies and remote-control programs, such as bots.

McAfee AntiSpyware Enterprise can be managed via the same console used to manage McAfee's anti-virus products, the ePolicy Orchestrator for larger companies, or the Protection Pilot for small offices. McAfee also announced its managed online anti-virus scanning service has

added spyware detection and will be offered under a new name, McAfee Managed VirusScan plus AntiSpyware.

The McAfee AntiSpyware Enterprise software and the online anti-virus service use the same spyware-detection signatures, says McAfee marketing manager Lillian Wu.

She says McAfee is charging 35% more for the additional spyware detection that's now part of the online anti-virus service, making the total cost \$36 per user per year. However, the additional anti-

spyware functionality will be provided without additional cost to existing VirusScan customers until their VirusScan contract expires and is set for renewal.

The only competitor offering the same type of combined anti-virus and anti-spyware scanning service is Panda Software. Many security software vendors, such as Computer Associates and Symantec, offer anti-spyware products.

McAfee AntiSpyware Enterprise software starts at \$20 per seat for as many as 25 nodes but drops to \$6 per seat for 10,000 or more. ■

Cisco

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chassis, moving traffic across ports on different line cards inside the switch. And if the chassis has modules for a firewall or intrusion-detection service, the WiSM can make use of these features, according to Cohen.

But the actual management, administration and security for the WLAN is still handled separately from the wired network. That will change over time, Cohen says, as Cisco adds software to tie its wireless networks into ambitious schemes such as the "self-defending network" project, which envisions a network that can automatically evaluate and adapt to network threats. But Cohen provided no more detail than other Cisco executives provided six months earlier on how or when this higher-level integration will be created.

Each WiSM blade costs \$45,000, much more than the \$18,000 charged for the first wireless blade introduced before the Airespace acquisition. The WiSM cost compares with \$35,000 for the high-end stand-alone Cisco 4400 controller.

The Wireless LAN Controller Module for the ISR 2800 and 3800 series products manages no more than six access points, more than enough for the typical branch or small office. The module can communicate over a WAN link to a central Cisco con-

troller or the WiSM. The central controller can send configuration and security settings for the branch office access points, and manage them remotely. This board is priced at \$2,300.

Both boards are in beta test and are scheduled to ship next month.

The mesh product, the Cisco Aironet 1500, is the company's late entry into a burgeoning market for outdoor wireless networks that can route packets among wireless nodes, thereby minimizing cable costs and sidestepping outages or radio interference.

The 1500 has two radios: it uses 802.11b/g connections with client devices, and 802.11a for backhaul and routing among the various nodes. The mesh can support up to eight hops, but Cisco recommends a maximum of four, according to Cohen. One or more of these nodes connects to any existing Cisco WLAN controller. The node is fully managed by Cisco's Wireless Control System management application.

The 1500 uses Advanced Encryption System to encrypt links between mesh nodes, and supports Wi-Fi Protected Access 2 (WPA2), WPA, and Wired Equivalent Privacy for client connections.

The 1500 is priced at \$4,000. ■

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Getting to the Core of Backup Problems

By eliminating network congestion, Force10 curbed the unpredictable backup times hurting this insurance firm's productivity.



"It was difficult to explain to our executive group that we couldn't reliably predict how long the backup would take."

Colin Hines

Senior Administrator of Network and Security Infrastructure at Tower Hill

On those occasional nights when the backup process for Tower Hill Insurance Group's policy management application took a full 16 hours, employees arriving for work would find themselves locked out of the application. "No one could do anything," says Colin Hines, Tower Hill's Senior Administrator of network and security infrastructure. "It was difficult to explain to our executive group that we couldn't reliably predict how long the backup would take."

Based in Gainesville, Fla., and with offices in Kentucky, Tower Hill is a leading property and casualty insurer providing coverage for homes, rental properties, personal automobiles, and commercial property to 500,000 policy holders in Florida. The company has a Web-enabled IT and billing infrastructure that supports its 400 employees and enables it to attract new agents and cost effectively scale its business.

Each night Tower Hill backs up data relating to policies and claims – about 4 terabytes. With the total volume of company data doubling every two years and hitting 15 terabytes this year, the strain on the network began to show. In particular, the time needed to back up its business-critical policy management application became unpredictable.

To ensure data integrity, IT first backs up the application to capture daily changes, then runs an update process that inserts information such as policy renewal dates, and then backs up the application again. While the update process completed in a predictable timeframe, each backup took anywhere from four to seven hours. On average, the three-stage backup and update process required 13 hours. When backup times ran longer, employees arriving for work were locked out of the system.

needed to direct the server team each time a new server was brought on line. The unpredictable backup times impacted IT in other ways, as well. Routine maintenance and software releases, for example, had to be done on weekends as it was impossible to do them at night.

With traffic volumes continuing to escalate, Hines knew something had to give. "Our core couldn't handle the amount of data we were pushing through it," he says. "And I want the network to be something you can just plug into and it goes." It was time to upgrade the network core.

Wanted: Performance and Reliability

When Hines began evaluating new core devices, he knew what he wanted. "We buy best in breed," he notes. "We needed line-rate throughput, non-blocking gigabit interfaces, and access lists. And we needed reliability."

Tower Hill's search for a new core router led them to Force10. Hines installed a Force10 TeraScale E1200 switch/router in early 2005 and has watched the combined time for both pre- and post-update backups of the policy management application drop to a consistent 2.5 hours. What used to be a 13 hour or more backup and update process is now routinely done in five.

"One of the really attractive things about the Force10 E1200 is that it's full rate line speed, non-blocking. It's not oversubscribed, as were other core switches I evaluated," says Hines. Each server now has true gigabit access to every other server and device on the network. In addition, the E1200 supports active redundant links with immediate failover if one link fails. As a result, each Tower Hill server with dual-gigabit interfaces has a 2-Gbps connection to the core whereas the previous core routers only supported one active connection in a dual-homed configuration.

In addition, the E1200 is a fully redundant system, ensuring continuous uptime for the network. And Hines has been impressed with the level of support Force10 provides. "We're a moderate-size business," he notes. "I've never had support this excellent."

Core Benefits

With a line-rate, congestion-free core switch/router in place, Tower Hill is assured of predictable performance from the network. As a result, backup times have been dramatically reduced, ensuring critical applications are always available during business hours and freeing IT staff to perform routine maintenance, software releases and other tasks in the evening rather than wait until weekends. IT's management overhead has also dropped, as the burden of ongoing network monitoring and troubleshooting has been eliminated.

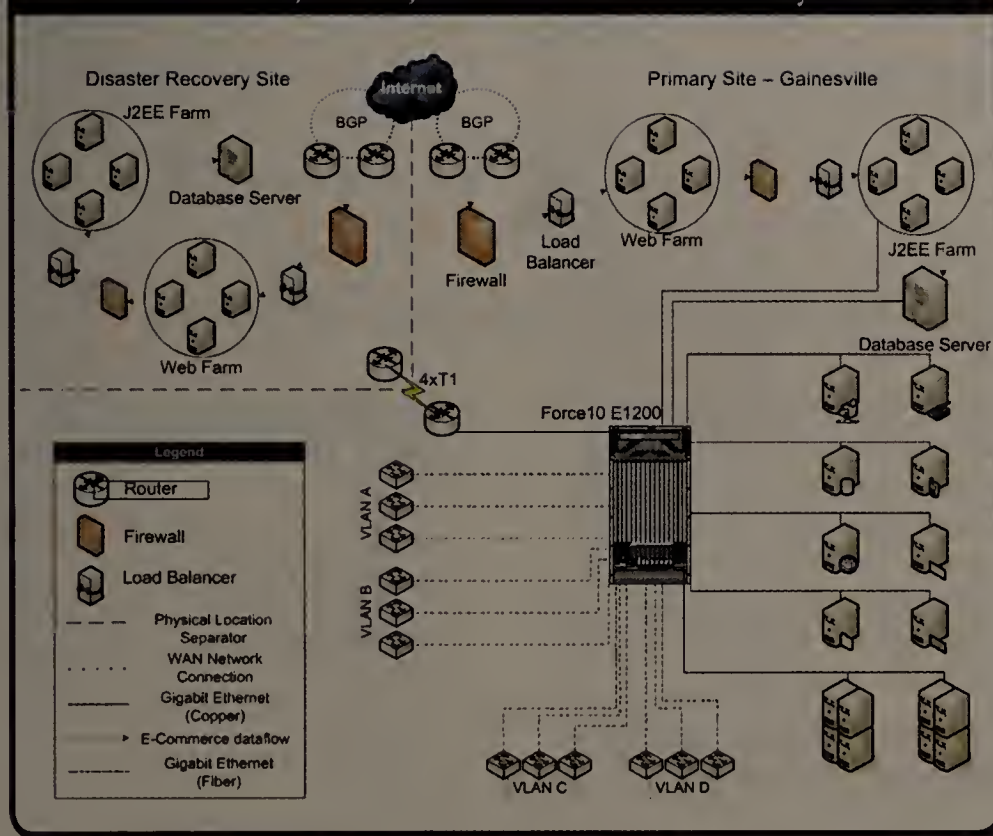
"Force10 gave us the ability to exonerate the network," Hines says. Tower Hill now has a predictable network with plenty of headroom to accommodate ever increasing traffic loads.

Ripple Effects

The network became the first thing the server group blamed for the varying backup times, Hines notes, since they could easily check out their equipment. Hines, on the other hand, was spending 25 to 30 percent of his time monitoring and troubleshooting the network, and finding work arounds to congestion problems. When he determined that the volume of data coming into blades on his two core routers was greater than the blades' connection to the routers' backplanes, he helped the server team work around the oversubscription problem by balancing where servers plugged into the network.

It bought them some time. But it meant Hines

Logical diagram of Tower Hill's primary network in Gainesville, Florida, and remote disaster recovery site



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Microsoft, others eye supercomputing

BY NETWORK WORLD
AND IDG NEWS SERVICE STAFF

Increased processing power coupled with lower-cost hardware is making supercomputing a more viable platform for corporate buyers running data-intensive business applications.

That was a major theme at the 18th annual Supercomputing conference held last week at the Washington State Convention and Trade Center in Seattle as vendors combined forces in an effort to spread supercomputing beyond its academic and research roots. Leading the charge was Microsoft, which has had a presence at the high-performance computing conference

since 2003, but stepped up its profile this year with a keynote address by Bill Gates.

In addition, the software giant used the conference as a launch pad for its formal entry into the market dominated by Linux.

"The [big] message is that Microsoft is entering scientific computing, technical computing, and we will bring all the attention and commitment that we have given to business and consumer computing in the past to this new area where computation is poised to make a significant impact," said Kyril Faenov, director of high-performance computing at Microsoft.

As part of that commitment, Microsoft is readying an operating system tuned for high-performance computing: Windows Compute Cluster Server 2003. The software is in its second beta release and should be generally available in the first half of next year, the company said.

Microsoft also said it has set up 10 high-performance computing institutes in uni-

versities around the world to support research and drive the company's efforts to meet the software demand for computing-intensive environments.

At the same time, vendors such as HP and InfiniBand switch-maker Voltaire announced support for Microsoft's cluster efforts. Platform Computing, which makes resource-management and orchestration software for high-performance computing clusters, said it was partnering with Microsoft to integrate its work scheduling Platform LSF software into Windows Compute Cluster Server 2003.

Industry experts note that Microsoft has a tough battle ahead as it tries to break into a market that has been dominated by more specialized, higher-end software and systems, such as IBM's Blue Gene, a commercial version of the supercomputer ranked as the fastest in the world.

Platform Computing also announced an expanded relationship with IBM to inte-

grate Platform LSF into Blue Gene.

"This is the very high end of supercomputing vs. the Cluster Compute Server from Microsoft for the entry level," says Songian Zhou, Platform Computing's CEO. "These are the bookends of the entire technology spectrum of the [high-performance computing] market, and this general trend [of integrating the management of HPC resources] is expanding into the data center for enterprise IT."

Supercomputers are appearing in enterprise data centers as the technology moves away from specialized, proprietary systems to clusters of low-end machines based on standard processors from Advanced Micro Devices (AMD) and Intel running Linux, industry observers say.

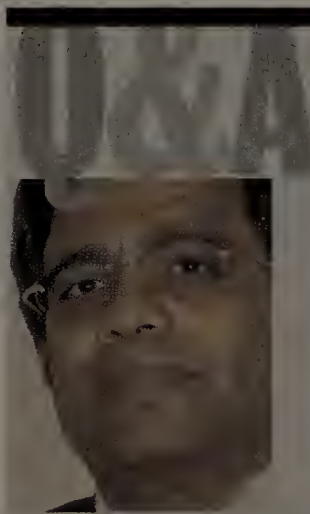
Even supercomputing giant Cray is moving to a standard platform, announcing at the Supercomputing conference that it was extending its partnership with AMD and

See Supercomputing, page 30

Short Takes

■ **Intel** last week announced that its **Vanderpool virtualization technology** is available for desktops. With virtualization, customers can run management or security services in a virtual machine without interrupting end-user applications running on the same system. The technology is available in Pentium 4 processor-based PCs offered by Acer and Lenovo, among other vendors. Intel recently began shipping Xeon MP processors with hardware-enabled support for Intel Virtualization Technology on servers. Intel is expected to start shipping virtualization technology on Itanium processors by mid-2006.

■ **Dot Hill**, which supplies disk drives to Sun Microsystems and white-box storage companies, has announced the **SANnet II U320 storage system**. The product offers twice the performance of an earlier system dubbed the SCSI-160 but costs the same. The new offering, which is backward-compatible with the SCSI-160, supports data rates as high as 320M bytes per second. The system will come in 3.6T- to 10.8T-byte capacities and is expected to be available later this fall.



ApplQ founder sold on HP

HP acquired storage-management software vendor ApplQ last month and named company founder Ash Ashutosh CTO for HP's storage software group. Network World Senior Editor Deni Connor recently spoke with Ashutosh about his new job and the market. An edited transcript of that conversation follows.

Why exactly did HP acquire ApplQ? It seems you were doing pretty well on your own — you OEM software to Sun, Hitachi and Engenio.

A couple of reasons — HP wanted to gain dominance in servers, regain market share in storage hardware and dominate the management-software business. If you look at those areas, ApplQ had announced an initiative for open management called OpenIQ, which is middleware that lets you build an infrastructure-management system. HP saw good synergies with that and with the server-management software we had been working with for a while.

Doesn't HP face competitive threats if it continues to be the OEM for

ApplQ software?

They do, but if they truly want to be a heterogeneous storage-software vendor, they have to have multiple distribution channels — ones that are owned by competitors. HP is taking a pragmatic approach to the market. We are bent on winning, but we also realize that HP can't sell everything alone.

Was ApplQ looking for a buyer?

We were not. As late as July, we were meeting with bankers about an IPO 18 to 24 months out. We were doing well. We looked at the opportunity and what the bankers said our valuation would be. We realized not only was HP a good culture fit for us, but also HP would be a partner that we could get closer with. In terms of an exit strategy for investors, it was a win.

What are the benefits for HP of the HP/ApplQ combination?

We see this as a huge storage- and server-management partnership. We are moving the paradigm away from storage management, but adding effective server management to create an adaptive enterprise. Then we will drag in other products HP has, like its back-up and storage products. Finally, it becomes a centerpiece of the company's goal of becoming the dominant management-software provider.

See Ashutosh, page 30

Supercomputing

continued from page 29

would build its next-generation supercomputers on the Opteron platform. Sun also used the show to unveil upgraded Opteron-based Sun Fire servers designed for high-performance computing clusters.

"More industries are using high-performance computing for their data-driven tasks. One reason is that cluster computers have become more reasonably priced," said Kathryn Kelley, communications chair for the conference. "The hardware, software and algorithms have become easier to use."

As a result, the Supercomputing conference is getting a closer look from corporate IT professionals, and not just those in energy, finance, manufacturing and pharmaceutical industries.

"The truth of it is, there are parallel problems that companies like Google face that, as I under-

Tops in teraflops

IBM's BlueGene/L System, for the third straight time, has topped the twice-yearly Top500 list of the fastest computers in the world. The system, installed at the Department of Energy's Lawrence Livermore National Laboratories, was measured with a Linpack benchmark performance of **280.6 teraflops.**

stand it, are as challenging as the scientific problems that we are trying to solve with high-end scientific computing," said Richard Loft, deputy director of the scientific computing division at the National Center for Atmospheric Research in Boulder, Colo.

He said Gates' keynote address is one example of the expansion of supercomputing beyond niche deployments into broader

enterprise use. "Microsoft has been notable by its absence in the high-performance computing game," he said. "The fact that [Gates] is giving a keynote signals something of a shift. It represents the broadening of the definition of high-performance computing from being simply about scientific calculations to including a lot of large-scale computing associated with business."

It's no surprise that attendance at the Supercomputing conference is growing, Kelley said. She estimates the show drew more than 9,000 attendees this year, compared with fewer than 8,000 last year. Nearly 270 exhibitors, including EMC, HP and Microsoft, crowded the two-level show floor.

"I personally think it's healthy for the scientific computing community and what you would call the large-scale business-computing community to swap ideas," Loft said. "There are likely to be a lot of ways we could end up cross-fertilizing one another." ■

Ashutosh

continued from page 29

What are the benefits of the acquisition to the customer, especially one with non-HP gear?

Nothing has changed. This continues to be a company that develops heterogeneous management solutions that are standards-based, and that works through partners. What has changed from a customer perspective is the uncertainty of what would happen to ApplQ. At least now, if I was a customer, I know for sure that the platform is going to be supported by HP. HP has also added more than 200% new resources to the product to work on issues ApplQ had planned to do over the next two years.

What is the future of storage-management software? How is it changing?

At the outset, we said that by 2006 or 2007, if someone is still in the business of storage management alone, they are probably in the wrong business. Enterprises have tools that can manage everything. ApplQ has started to do this with server and application management.

You will start to see tools such as change management or predictive fault management incorporated into storage-management suites. In our case, they are coming as a result of the higher-level integration we are doing. There are a lot of niches you can focus on — HP is focusing on one that does performance, asset, fault, change and device management, all of it based on standards like J2EE, SMI-S, CIM or JBOSS. We are going to consolidate device management, build a data-center management platform based on OpenIQ, combine server and storage management and, finally, [use] IP out of HP Labs to perform information management. ■



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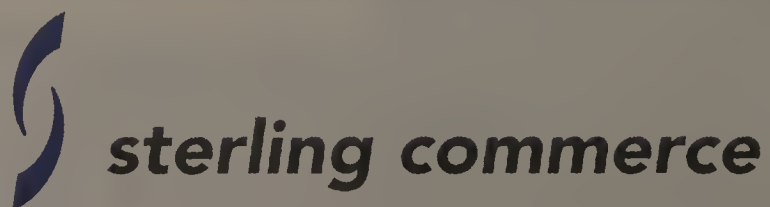
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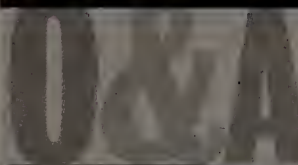
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Short Takes

■ **ANTs Software** has released an update to its high-speed **ANTs Data Server relational database** that makes it compatible with databases from MySQL AB and IBM's Informix division; companies can now move applications written for those databases to ADS relatively easily and with little recoding. ADS Version 3.4 also is compatible with Oracle's 10g and Times Ten databases, Microsoft's SQL Server and Sybase's Adaptive Server Enterprise. ANTs says it hopes the new version will attract MySQL customers. Oracle recently acquired Innobase OY, an open source company that develops a popular component of the MySQL database. ANTs claims to offer a significant performance boost compared to the leading databases, particularly when handling heavy transaction loads, complex analytical queries or a large number of active connections. Pricing for ADS Version 3.4 is unchanged at \$25,000 per processor for the enterprise edition. The company offers a special deal for MySQL customers, who can switch to ADS for a limited time for half of their annual MySQL invoice.

■ **Ping Identity** last week released an update to its identity-federation server. **Ping Federate 3.0** includes support for Version 2.0 of the Security Assertion Markup Language standard, which was approved in March by the Organization for the Advancement of Structured Information Standards. The server also includes a new use-case configuration engine and can be deployed as a stand-alone network service. Identity federation allows corporations to share user authentication across security boundaries. Ping is pushing SAML 2.0 as the convergence point for standards-based, interoperable identity federation. Currently there are a number of identity-federation protocols that do not completely interoperate, including SAML 1.1 and 1.2 and the Liberty Alliance specifications 1.1 and 1.2. Ping Federate 3.0 is available now for download. The first 100,000 transactions on the server are free. Users will pay a yearly subscription fee for further use: \$10,000 per year for 1 million transactions or \$30,000 per year for unlimited transactions, including support and maintenance.



Q&A SAP CEO faces many challenges

Business-applications vendor SAP faces plenty of challenges these days. Competition from rival Oracle is intensifying, especially after Oracle's acquisition of PeopleSoft; partner Microsoft is expanding into business analytics, an area in which SAP also aims to be a major player. In addition, new open source offerings are emerging in the area of CRM, while hosting companies, such as Salesforce.com, continue to make inroads. The list of challenges facing SAP CEO Henning Kagermann appears endless. Despite his heavy workload, however, the friendly, straight-talking executive found time to discuss these challenges with John Blau of the IDG News Service.

How has the Oracle buying spree affected you so far? Are customers who use the Oracle stack to run their SAP applications in jeopardy of being caught in a competitive crossfire?

Our customers have no disadvantages. We will continue to

support products from competitors as we have done in the past. We are professional enough to handle co-opetition, a situation we have not only with Oracle. In applications, we're strong competitors but, on the other hand, our software runs well on Oracle databases.

And the impact of Oracle's acquisitions?

The acquisitions were forced by market changes. Over the past four years, we gained market share and created a bigger distance to Oracle. So Oracle bought some market share to reduce this distance. As a result, they now try to compete on price.

You held merger talks with Microsoft, but these amounted to nothing. Are there ways for you to cooperate over and above your new joint product Mendocino?

Nothing has changed. We have a good working relationship with Microsoft — Mendocino being a prime example — but there are others, such as improving the interconnectivity of .Net and NetWeaver. We have a relationship that works well, and we have no intent to change it.

How serious is the threat of hosted services? And are you still

See Kagermann, page 34

Mgmt. vendor targets shared folders

BY JOHN FONTANA

Management vendor Desktop Standard is adding to its PolicyMaker software lineup a new Share Manager package that provides users with tools for centrally managing shared folders on servers and desktops.

Centralized management ensures that shared folders are kept under control and don't grow to become a security risk. Share Manager is an extension to the group-policy management features of Microsoft's Active Directory Group policy, which is supported on Windows 2000, XP and Windows Server 2003, lets administrators manage, customize and lock down desktop and server settings based on a set of policies maintained in the directory.

"With [Share Manager] I keep the share naming conventions, the access control lists and everything associated with that network resource consistent," says Alex Diaz, enterprise development manager for Katten Muchin Rosenman, a Chicago law firm. Diaz says group policy means he is in

control: "I want to make sure only certain people have access to certain shares. On the back-office servers, we try to enforce hidden shares, so you can't scan the network and attach to resources. By securing the shares, that narrows the risk."

He says he also uses the software as a disaster-recovery tool. "If I have to rebuild a server or replace hardware, I don't have to rely on a technician to create all the shares again," he says.

Desktop Standard has integrated Share Manager with Microsoft's Access-Based Enumeration (ABE) technology, which was introduced in Windows Server 2003. ABE lets administrators make folders visible only to those who are authorized to see them, a feature that has been a staple of Novell's NetWare for years. With Share Manager, users can set ABE policy on file shares.

In addition to ABE, the main features of Share Manager are its create, modify and delete controls and its set of 25 filters used

to target share settings at specific PCs. Among the create, modify and delete controls is one that eliminates specific shares, managed or unmanaged, whether visible or hidden from users. The filters target a PC's share settings based on its hardware features, such as CPU speed and disk space, or its software features, such as operating system, physical address or site domain. For example, administrators can configure filters to remove all unauthorized shared folders on user desktops.

The release of Share Manager comes a week after Desktop Standard released the latest version of its PolicyMaker Software Update, a patch-management system built on group policy. Software Update 2.0 includes support for Microsoft's SQL Server Reporting Services, and it uses the same patch detection as Microsoft's patch tool, Windows Server Update Services.

Software Update is priced at \$11 per seat. Share Manager is priced at \$10.50 per managed desktop or server. ■

**NET INSIDER****Scott Bradner**

A telecom-regulation pipe dream

There is a new version out of the draft telecom reform bill (www.networkworld.com, DocFinder:9825) that I wrote about a while back (DocFinder: 9826), and from its rough start, it's heading in a worse direction.

The committee staff seems to be drinking the same Kool-Aid mixed by the big telecom carriers that the FCC has swallowed. The Kool-Aid causes drinkers to hallucinate that big telecoms' plans for closed, vertically integrated, everybody-has-to-pay-the-carrier-for-everything silos are better for customers and the

country than the open Internet has proved to be. To see what big telecom is thinking, read SBC Chairman Edward Whitacre Jr.'s interview with *BusinessWeek* magazine about how Google and other Internet services use "for free" the Internet connections SBC's customers already pay for (DocFinder:9627).

The House bill and the FCC use good-sounding words about network neutrality but then eviscerate the same words with pro-carrier caveats.

I expect that it would be possible to design a telecom regulatory regime that would actually be good for the users and the country but I doubt we will see any such thing out of Washington. That is, unless Google's lobbyists learn a lot — and quickly — by watching the well-connected RBOC lobbyists.

Just what might good telecom regulation include? What would I do if it were up to me? First, as the House bill does, I'd preempt all local and state controls, but I would go further and also eliminate all local franchise fees. Then I'd split the problem into two spaces: facilities owners and service providers. I would not differentiate between the types of facilities, or pipes, as the House bill does. In the IP age, pipes are pipes, not video pipes or phone pipes.

Under my regulations a pipe owner could keep the facility to itself and offer its own phone, Internet or video service — there would be no forced open access to facilities. Or it could allow Internet access, on whatever equal terms it chose, to anyone who wanted to provide an Internet-based service. It could not, however,

concurrently offer Internet access and any other Internet-based service. Pipe owners also would have reasonable access to conduits and poles.

"Internet service" is just that — unimpeded and unrestricted access to the Internet and Internet-based offerings. An ISP would be prohibited from interfering in any way with traffic to or from a customer except at the express request of that customer, or from favoring one service provider over another. For example, a customer could order an ISP-provided and -run firewall if it so desired. ISPs, but not providers of Internet-based services, would have to obey court-ordered requests for wiretapping from law enforcement. End-to-end encryption might make the wiretaps less useful than they might be, but so it goes.

I assume that video and VoIP services will become just Internet-based offerings without any need to establish special rules for them. E911-like location services would have to be enabled by ISPs for all service providers using the ISP, including VoIP providers.

Obviously, these rules would not make Whitacre very happy, because he could not squeeze extra money from Internet-based services just to have him leave them alone. But leave them alone he must.

Disclaimer: Harvard has schools that train people to actually create regulations. Clearly, I did not ask them for help in the above, so it's my own opinion.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com

Kagermann

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planning to launch the hosted service announced earlier this year?

We said in June that some announcements will come, and this is still true. Today, we already offer hosted services after having started more than a year ago to partner with hosting companies.

What portion of revenue do these services generate?

I would say less than 5%. Most customers still prefer to buy a license and give it to their hosting company.

But what about the new service? What is it?

We will be offering a service that will help customers deploy certain functions of our software products much faster. This is similar to what Salesforce.com does. The real benefit of Salesforce is not the hosting opportunity, but rather the fact that the company has selected some functionalities that it can deploy very fast. This is what we're planning.

Will customers be able to run SAP on virtual environments?

Virtualization is about separating the underlying hardware infrastructure so users can switch resources dynamically. Initially, we offered it as a separate capability, with Fujitsu Siemens as a development partner. Then we extended the offering for other key players in the market and their hardware. Finally, we decided to make it a standard feature of NetWeaver

because this is our platform for running all applications.

SAP is expanding its business-intelligence functions in NetWeaver. How does this impact your partnership with Business Objects and others?

This is another example of co-opetition. We have extended our analytics capabilities with SAP Analytics. We have made it very clear to the market that embedded analytics is the future and that analytic capabilities are part of end-to-end business processes. On the other hand, there are specialists, such as Business Objects, who are interested in working closer with SAP because we have joint clients. We're not fighting them in this area. Although we will continue to bring more and more of our own analytics to the market, we are committed to openness and not closing our products to others.

And what about Microsoft's recent move into this area? Is there reason to be concerned?

This isn't a surprise. We treat Microsoft like any other partner. In fact, I see a good opportunity for us to embed some analytic capabilities in our Mendocino joint offering. Analytics is just another area where we have some overlap with Microsoft, but it's not an area that will stop us from continuing to cooperate.

How about Enterprise Systems Architecture (ESA) adoption?

It's very good. We have a target this year; we expect to have road maps with between 200 and 300 customers by the end

of the year. When I talk about road maps, I mean workshops where we discuss with customers their future business and IT strategy, and define jointly an architectural blueprint and road map. Some customers start their deployments immediately. Others wait a couple of years. But our target is to get the message to customers that they need a road map and that we are the right partner to help them.

If you're so ESA-based, where does value-add come in? Where's the competitive differentiation?

If you compare SAP with others from a competitive, differentiation perspective, the most important differentiator is our broad experience in the area of applications. We are the leader in nearly all industries and have a very broad footprint with key companies in the world. We know how they do business today and have a good idea of how their business will look in the future. This knowledge is important for us to design and implement services in the right way. In addition, we are running the most advanced and demanding implementations in the world. We know how to provide services that perform and scale. These are some of our unique differentiators.

Some vendors including IBM have announced an Enterprise Service Bus for managing multiple services in a service-oriented architecture. How about you?

To some extent, we already do because we have NetWeaver as a bus. We can support the integration of non-SAP services

and products with ours. So our customers have choices. If they want a second platform and want to connect the two, they can. And if they want to integrate non-SAP applications using the integration capabilities of our platform, they can do that, too.

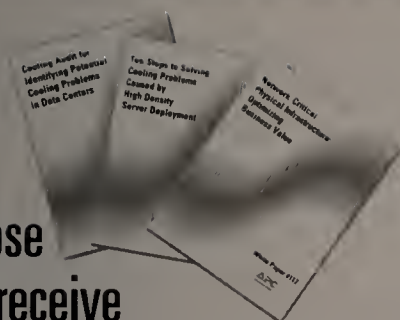
How are you dealing with new open source players such as SugarCRM, which offer low-cost software to smaller companies?

I don't believe business applications are a field for open source. Why do I say this? The Linux operating system is one thing. It's well defined and developed by a community used to programming. Applications are another story, particularly business applications. Designing applications to run business processes requires very strong governance. And I have my doubts if a community can achieve this. You need strong guidance and expertise to convince customers that the way you design business applications is the right way for the future.

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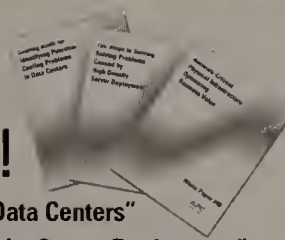
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ISXT2800MD100R	100	up to 5kW	\$1,649,999*	\$50,999**

High Density Configuration (shown above)

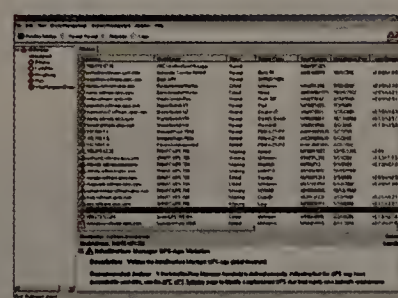
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SERVICE PROVIDERS

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EYE ON THE CARRIER

Johna Till Johnson



Google goes to Washington

I've written several columns recently on the need for service providers to work together to create a framework for peering agreements that ensures the effective and profitable handoff of QoS-enabled traffic. The urgency just went up a notch: Carriers had better plan to tackle this issue soon, or look for Google and its peers to lobby the government to force them to do it.

Last month Google announced that it's opening an office in Washington to lobby for, among other things, "broadband access and Internet standard-setting."

Google didn't say so directly, but you can bet it's gotten just a teensy bit annoyed by the way peering spats between providers such as Level 3 Communications and Cogent Communications can shut down Internet access for users, as happened a few weeks ago. As noted in previous columns, Google (along with Amazon.com, eBay and the online gaming community) have the most to lose if the Internet does-

n't deliver highly reliable end-to-end service. These companies' revenues are on the line, so expect them to take the issue of effective peering arrangements very seriously — more so than the carriers currently do.

Service providers generally negotiate Internet peering agreements on a case-by-case basis — and these agreements often date back to the days before service providers seriously considered making money from backbone Internet transport. Back then, the real money came from voice and enterprise data services.

In other words, Internet backbone services — and peering arrangements — didn't need to be profitable, because the fund-

ing came from somewhere else. That's why all the pure-play ISPs, such as UUNET and MFS, were bought by providers such as MCI and AT&T that offered a broader mix of services: the real profits came from on-net voice and data traffic, and carriers could subsidize unprofitable ancillary services, such as running Internet backbones, out of those profits.

Times have changed. Profit margins for voice and traditional enterprise data services are cratering, so relying on them to subsidize anything is a fool's game. Corporations are moving away from those services and toward Internet-based services, which by definition are multi-carrier, particularly for remote and branch offices.

That means service providers need to figure out how to make a profit from handing off Internet backbone traffic to their peers. And not just any traffic: With the rise of multimedia applications (voice, video, online gaming), they must track not only the quantity of traffic but also the traffic QoS type that they're handing off to their peers.

The bottom line is that service providers had better figure out a profitable peering framework pretty darn quick — or expect Washington to force them to do so.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

GM to roll out intelligent car alternative

Says OnStar-based V2V technology will be easier, less expensive than government's VII.

BY JIM DUFFY

GM is developing an alternative to the U.S. Department of Transportation's intelligent vehicle-to-vehicle collision and congestion avoidance communications system that the automaker says is less expensive and more sophisticated.

GM's V2V system is an extension of the car manufacturer's OnStar vehicle-to-service center driver assistance communications system. It uses the same satellite and cellular-network-based GPS technology as OnStar, yet facilitates vehicle-to-vehicle communications and 360-degree visibility — two features lacking in OnStar.

GM says V2V will be less expensive to implement than the government's \$3 billion to \$10 billion Vehicle Infrastructure Integration (VII) network because it uses OnStar's existing network infrastructure. VII is envisioned as a network of 220,000 IEEE 802.11a and 802.11p wireless hot spots requiring onboard antennas and transceivers in cars, and roadside units at interchanges and highway operations and maintenance facilities along interstate and state highways.

The Department of Transportation and carmakers backing VII recently lobbied the telecommunications industry to support it (www.networkworld.com, Doc Finder: 9830).

Smart, careful cars

Features of GM's new vehicle-to-vehicle communications service.

- Emergency electronic brake light — driver advised when any vehicle ahead brakes hard.
- Slowed/stopped vehicle adviser.
- Lane change and blind zone adviser/warning.
- Rear-end collision avoidance.
- Forward collision avoidance with auto-brake.

SOURCE: GM

GM demonstrated V2V two weeks ago at the Intelligent Transportation Systems World Congress in San Francisco. Using an antenna, a "computer chip" and GPS, the system is designed to enable a vehicle to detect the position and movement of other vehicles up to a quarter-mile away in a 360-degree radius.

V2V allows vehicles to anticipate and react to a changing driving situation, and then warn drivers with chimes, visual icons and seat vibrations. If the driver doesn't respond to the alerts, the car can bring itself to a stop to avoid collision, GM says.

A V2V-equipped car can alert the driver to vehicles in blind spots with a steady amber light in the side mirror. If the turn

signal is activated, a flashing amber light and gentle seat vibration on the side can notify the driver of a potentially dangerous situation, GM says.

The system also can help alleviate pile-ups on congested roads during rush hour caused by a chain reaction rear-end collision, GM says. The trailing vehicle warns the driver first with visual icons and seat vibrations on the front and then automatically brakes if there is danger of a rear-end collision with the vehicle ahead, the company says.

V2V also can warn a driver when vehicles ahead are stopped or traveling much slower, or when a vehicle ahead brakes hard. It also can use rear lights to warn the other driver when the approaching vehicle is moving very quickly and a rear-end collision is imminent, GM says.

In 2007, all GM cars will be equipped with OnStar technology for V2V communications, the company says. Equipment will also be available to outfit older vehicles with the technology.

GM also is working on VII. V2V is another option in a line of similar vehicle intelligence projects underway within the auto industry, a company spokeswoman says, while acknowledging that V2V is easier for GM and gives the manufacturer a competitive advantage. ■

Short Takes

■ Once their merger is complete, **AT&T** will be led mostly by longtime **SBC** executives, according to a management lineup announced recently. SBC Chairman and CEO Ed Whitacre will keep those titles following approval of SBC's \$16 billion deal with AT&T, which may be completed this month. The merger transition will be led by James Callaway, who has held the title of group president of AT&T integration since February. David Dorman, chairman and CEO of AT&T, will become president of the new company and a member of the board of directors for a brief transition period before resigning. The carrier will retain its senior executive vice president and general counsel, James Ellis, who has been at SBC since 1984. SBC COO Randall Stephenson will hold the same position in the merged company.



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Sun, Lucent tout encrypted e-mail service

BY TIM GREENE

Sun, Lucent and Echoworx are banding together to provide an encryption service that can save businesses from having to build their own infrastructure to

secure e-mail.

Called Sun Secure Mail, the service will be sold to ISPs and other carriers that can sell it to customers, be it businesses or consumers. While ISPs would set the

retail price, Sun says it thinks that could be between \$5 and \$10 per user per month based on what it will charge the ISPs for the wholesale service.

Sun hasn't named any service

providers that are going to buy it, but it says a U.S. phone carrier/ISP is to announce on Nov. 28 a service based on Sun Secure Mail.

USA.net, an ISP for midsize businesses, says it is evaluating the ser-

vice and plans to offer an encrypted e-mail service next year. Sun Secure Mail could let USA.net secure customer e-mail without having to invest in its own hardware and software, says David Ramon, president of USA.net.

The company three years ago ran an encrypted e-mail service based on hardware and software it bought, but it posed so many problems that he discontinued the service. Now, with heightened concerns about security, customers are again seeking such a service, he says.

An encrypted e-mail service might be attractive to businesses that want e-mail encryption but lack the resources to set up their own, says Anne MacFarland, director of infrastructure architecture and solutions for Clipper Group. Setting up public-key infrastructure for encryption is complex and costly, and outsourcing it can at least keep the annual costs predictable for budget purposes. "Doing encryption yourself is something that could suddenly create a lot of workload if something goes wrong, and you don't know when it will," MacFarland says.

Hardware for the service will be based in a Lucent Worldwide Services network operations center in Broomfield, Colo., and Lucent will take care of provisioning the services. Echoworx technology authenticates users and encrypts the e-mails, and Sun is coordinating the effort and providing the servers needed to support the service.

Customers that have signed up for a retail subscription to Sun Secure Mail can go to the carrier's provisioning site and download a software plug-in for Microsoft's Outlook, Outlook Express or BlackBerry e-mail. The plug-in creates a "secure" button next to the "send" button in the e-mail application. Clicking it encrypts the e-mail.

If it is sent to someone who also subscribes to Sun Secure Mail, it goes directly to them and their machine decrypts it. If not, the recipient gets an e-mail telling him to pick up the e-mail at a Sun Secure Mail site, where he provides a pre-shared secret, such as his mother's maiden name. He can then open the e-mail on his Web browser. ■

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TECHNOLOGY UPDATE

■ AN INSIDE LOOK AT TECHNOLOGIES AND STANDARDS

WSDM spurs management integration

BY HEATHER KREGER

Corporations today struggle to manage complex business systems built on a variety of IT and application resources from a diverse set of vendors. These business systems should have flexibility to accommodate mergers, acquisitions, supply-chain changes and compliance with regulations.

A standard from the Organization for the Advancement of Structured Information Standards (OASIS) serves as the foundation for management integration. Completed in March, Web Services Distributed Management: Management Using Web Services 1.0 (WSDM) defines how to represent and invoke the manageability of an IT resource as a Web service. WSDM allows management software from different vendors to interoperate more easily, enabling end-to-end and even cross-enterprise management.

WSDM is based on a set of key architectural principles: composability, model agnosticism, agent-architecture agnosticism and inspection. Model agnosticism allows WSDM to represent any resource model using Web services. Composability means that resources must support only the minimum functions needed, allowing implementations for small, constrained resources or sophisticated servers. During application and resource development and dynamic discovery of WSDM resources at run-time, development tools will use inspection of XML documents. Agent-architecture agnosticism allows WSDM to adapt current resources, and not force reinstrumentation.

The management standard provides four key technologies: Web services platform

profile, manageability capabilities, relationships and the WSDM event format.

The Web services platform profile explains how other OASIS standards are used as 'Net platforms, ensuring that standard Web services skills, tools and run-times can be used for management. It precludes the need for maintaining a management-specific Web services platform.

WSDM groups management functions into sets of properties, operations and events that together provide the information needed to perform specific management tasks. WSDM defines a basic set of standard capabilities that can be extended: Identity, Description, Metrics, Configuration, State, Operational Status and Advertisement.

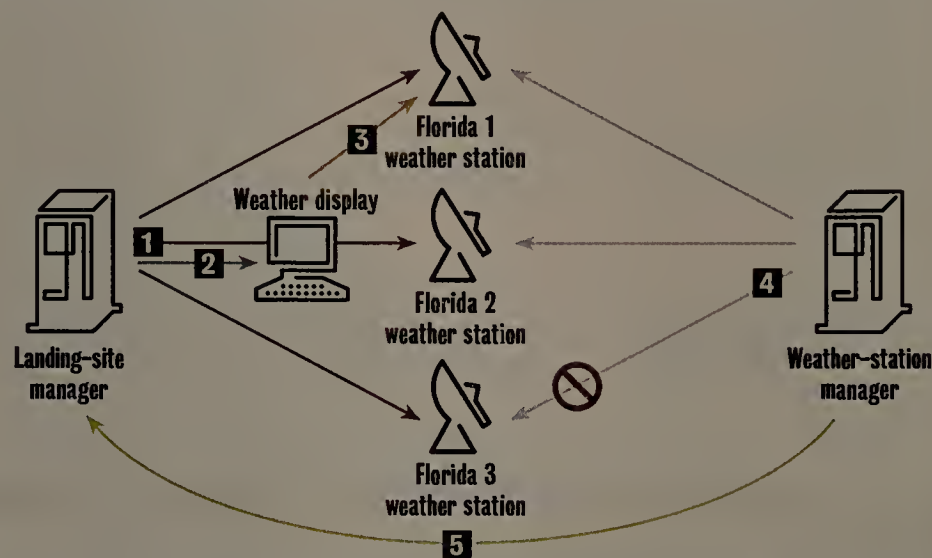
WSDM supports two kinds of relationships: simple information about a relationship between resources, and those that have their own properties and behavior and are accessible via Web services directly. Relationships can be discovered from manageable resources directly or from relationship registries.

The WSDM Event Format (WEF) is an XML format that enables interpretation of management events from different sources. The WEF organizes event data into three categories: the event reporter, the event source and situation data, each of which contains a few standard properties found in most management events and may be extended to add situation-specific data.

WSDM provides the foundation for integrated management of business systems across a corporation and between corporations. This evolution will eventually

HOW IT WORKS: WSDM

Web Services Distributed Management is a standard for management integration of Web services. In this scenario, WSDM allows a space-shuttle landing-site manager to be notified whenever a weather station changes status, so he can switch to the fastest calibrated weather station available.



- 1 Landing-site manager discovers all weather stations and subscribes for operational-status change events on all weather-station Web services.
- 2 Landing-site manager polls all weather-station Web services for response time and assigns the weather station with the lowest response time, Florida 1, to weather display in a WSDM relationship.
- 3 Weather display polls Florida 1 weather station for weather data.
- 4 Weather-station manager polls for weather-station data from all weather stations. When data is inconsistent, the weather-station manager recalibrates the device, taking it offline and changing its operational status to unavailable.
- 5 Weather-station manager sends an operational-status change notification to a landing-site manager, who assigns Florida 2 to the weather-display client to poll.

eliminate the need for management-specific infrastructures, custom integration of managers and custom business system-management applications.

Kreger is a management and Web services architect for IBM and co-chair of the OASIS WSDM Technical Committee. She can be reached at kreger@us.ibm.com.

Ask Dr. Internet

By Steve Blass

I fear that my PC has been infected with botnet software. None of my spyware detection or anti-virus software detects anything, but my computer has slowed to a crawl and often runs at close to 100% CPU utilization when I have only one browser window open. What can I do to find the culprit and clean the machine?

If you cannot wipe the machine clean and start fresh, you may be able to ferret out the offending software by using a personal firewall program, such as Kerio

Personal Firewall or Zone Alarm, which will block outbound connections and incoming traffic. Turn off the Microsoft System Restore feature in the My Computer properties, as many malware programs hide installation kits there so that they get reinstalled if you find and remove them. Configure the firewall to block all traffic by default, and to prompt for permission on every connection attempt. Reboot the system and watch the firewall prompts. Deny everything that you don't understand, and look for repeated connection attempts from

programs that you didn't launch. With luck, you can find the primary culprit. With that clue you can search the Web to identify the suspect program.

If you are careful and don't remove real operating system files, you can delete the suspect(s) and repeat the procedure until your computer behaves.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.



GEARHEAD INSIDE THE NETWORK MACHINE

Mark Gibbs

An impressive photo-archiving tool

Last week we were discussing how we were trying to set up an online photo gallery and how we wound up writing some code to generate the XML data file that was required by the Flash-based gallery system we took a liking to for the project.

We also discussed the RealBasic cross-platform development system we used to build our XML generator. We've had a little more time to get to know this product, and it really is amazing and easy to use.

One of the really clever things in RealBasic becomes evident when you are designing an application and moving components around on a window: Layout lines automatically appear to show the distance between components, and highlights show their centers and edges. It can even snap components to the edges of other components.

When it comes to coding applications you can often just add a few lines to specific events, such as button clicks and "mouseovers," and voila, an application is born. There's support for Apple's Spotlight, serial ports and even threads!

Our only complaint is that you can't see the code of your entire program; you can only see individual events, which makes it a little more difficult to keep track of everything that's going on. Even so, we score RealBasic at 9.5 out of 10.

RealBasic Standard costs \$100, and \$400 gets you the

Professional edition, which includes cross-platform compiling, SSL support, and database connectors for Oracle, SQL Server, FileMaker Server and MySQL.

The program worked well, but with 1,000 files we'd need to do a lot more to have a really manageable system. Then we were contacted by reader Dave Morris: "Please allow me to recommend Coppermine Photo Gallery (<http://coppermine-gallery.net>). It is full-featured, easy to use and free!

This is a remarkable gallery system that appears to be very powerful.

It is based on PHP and MySQL and therefore doesn't require Flash or anything else to run on any platform with any modern browser!"

He also shamelessly asked us to plug his site, Free IT (www.freeit.net), which has as its goal "to introduce excellent and cost-effective alternative solutions for your business and computing needs, with the realization that most people are not interested in the technology for technology's sake, but the end result." This is to say, he is all about open source and there's some good stuff there.

Anyway, Morris is correct: Coppermine is really, really good. It is a breeze to install, and the only problem you're likely to have is setting the correct permissions on the image directories.

Along with PHP and MySQL, Coppermine requires a Web server and the GD Library (www.boutell.com/gd, or any version of ImageMagick (www.imagemagick.org).

Among its exhausting list of features, Coppermine makes it possible to organize pictures in categories and albums; allows you to bulk-upload pictures to a subdirectory and then to an album; supports multimedia; allows creation of thumbnails and intermediate-size images; lets you search picture metadata; displays a selection of last-added as well as random pictures; supports private galleries and groups; supports multiple languages; lets you add comments and ratings to pictures and send pictures in e-cards; and has a slideshow viewer.

In short, this is a remarkable gallery system that appears to be very powerful and easy to administer. The default look-and-feel is a little clunky, but we changed our look-and-feel to be Mac OS X-like. If you want to check out our gallery of favorite football shots, drop us a note with the subject "Photos" and we'll send you the link.

Well, it will be Thanksgiving in a few days so we have to go and brine our turkey. What, you've never brined a turkey? Once you've tasted soy-brined turkey, you'll wonder how you ever had Thanksgiving without it. Drop us a message with the subject "Turkey," and we'll send you the technical instructions.

Bon appetite! No eructations to gearhead@gibbs.com. Oh yeah, don't forget Gibbsblog (www.networkworld.com/weblogs/gibbsblog/).



CoolTools

Quick takes on high-tech toys. Keith Shaw

For years, companies have tried different approaches to get people to add video to their phone calls. The latest effort is from Sony and Glowpoint, which last week launched a consumer version of

Sony's Instant Video Everywhere (IVE, pronounced "ivy") service. The basic IVE service will let consumers make free, unlimited voice and video calls to other IVE members. Think Skype with the addition of a Webcam.

What will make users flock to IVE? Other services, especially in the videoconferencing arena, have a head start. Sony and Glowpoint say their software lets people make video calls as easily as they make telephone calls. "VoIP technology has been around for years, and the ones who did it were the geeks among us," says Michael Brandofino, Glowpoint's CTO. "The technology didn't really take off until Vonage let you plug in a regular phone to their equipment to make VoIP calls without having to worry about the technology."

Unlimited free video calls will help also. The company says it hopes people will take advantage of free video calling and use IVE as they use a phone — when they're at home, at a hot spot such as a coffee shop, or sitting in an airport lounge, they'll be able to use the broadband connection to make a video call (only 128K bit/sec of bandwidth, more than enough on a standard DSL or cable modem connection).

Much depends on how successful the IVE viral marketing plan is. Getting friends and family to sign on depends on how easy the product is to install and use. Even more difficult is getting people to change their calling habits. It's easy to convince a mobile worker three time zones away that making a video call to a child is worth-

while, but are there other needs for consumer video calls? The video-phone hurdle is a big one; there are times when we don't want others to see what we look like.

Sony and Glowpoint officials understand this, and they plan to market the IVE service to the scenarios where video calling makes the most sense. For example, one use is to promote the service to gamers. In an online poker scenario, seeing your opponents might help you make an educated guess as to whether they're bluffing.

Sony also plans to use the IVE service as a way to market and sell other Sony products. Every IVE user will have access to a Sony Video Portal, accessed by dialing 7669 (stands for SONY). The portal lets users view movie clips,

gaming demos and other Sony-related content. Future Sony Vaio notebooks will include embedded Webcams as well as pre-loaded IVE software. The IVE software works with any Webcam and PC (no Macintosh support just yet), but the less people have to install on their systems, the better.

I'm more intrigued by using the service for business. Companies that don't want to pay for videoconferencing may let their employees make the free calls to get their feet wet. A lot of IVE's cool features — a video mailbox, the ability to make VoIP calls to cell phones or regular phones, as well as video calls to other IP and ISDN-based video systems — will have an associated cost. The Premium version of IVE will cost \$9.95 per month, and the

Professional version — which is meant more for the small-to-midsize business market — will cost \$19.95 per month, Glowpoint officials say.

But the first step is there — providing users a chance to sign up for free and give them the ability to make free voice and video calls to other IVE members. Whether consumers take the next giant step toward video-phone calling will be the difference between a success story and just another attempt in the video phone's history.

Shaw can be reached at kshaw@nww.com.



Sony's Instant Video Everywhere service adds video to IP phone calls.

The Intel logo is positioned in the top right corner of the advertisement. It consists of the word "intel" in a lowercase, sans-serif font, with a small registered trademark symbol (®) to its upper right. The logo is white and set against a dark, rectangular background that is part of the overall image.

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On Technology
John Dix

Zimbra: Upping the bar on e-mail

Two interesting tools were on display at the recent Open Source Business Conference in Boston, one a feature-rich e-mail system and the other a code review tool to help you avoid license squabbles.

The e-mail offering is from Zimbra, a venture-funded start-up that has pieced together several open source components to build the Zimbra Collaboration Suite. The current beta includes both a server and a browser-based Web client that is built using Asynchronous JavaScript and XML, the so-called AJAX pack.

AJAX enables browser-based applications to behave more like client-based code by "constantly moving small pieces of information between browser and server, changing what you see without reloading the full page," Zimbra says.

The Zimbra server talks to other clients via IMAP, POP, Microsoft MAPI and iCAL, and can be integrated with Active Directory and LDAP directories.

But what sets Zimbra apart are the client features. The tool, for example, tracks conversations, appending a number to each new message in a string and allowing you to view all messages in a particular conversation.

Zimbra also has a slick feature that lets you create tags and append them to messages, after which, regardless of what folders you put the messages in, clicking on the tag brings all relevant messages front and center.

Other cool features include the ability to: mouse over a date in a message to open your calendar; mouse over the name of a message sender to display contact information; mouse over a Web address to bring up a preview page; and search messages by date ranges, attachment types and the domain of the sender.

You can preview the product at www.zimbra.com and even download an evaluation copy of the network edition server.

The other interesting tool at OSBC was a service from Black Duck Software that lets you scan code for stuff that shouldn't be in there — whether it is open source code in your home-grown programs or vice versa.

While the company's code analysis service has been available since last year, it just announced the ability to scan for specific strings such as GPL code, says CEO Douglas Levin.

The service is based on two knowledge bases, Levin says. One is an 80M-byte database containing millions of code prints that Black Duck updates weekly, and the other is a repository of the customer's proprietary code.

Both are used to scan code looking for violations that can land users in hot water, especially where open source tools are used. Black Duck's services range in price from \$9,500 to \$25,000.

— John Dix
Editor in chief
jdix@nw.com

Opinions

Hamming it up

Regarding "Cisco talking IP-radio nets" (www.networkworld.com, DocFinder: 9726): It is truly interesting to see technology that was pioneered by amateur radio operators (hams) become mainstream. For several years, hams have been pushing this technology forward and using it to communicate across the globe. Right now, I can use my HT (walkie-talkie) to talk with storm-ravaged areas — Alaska, Europe, Australia and even Antarctica. What irritates me is that I have read nothing that credits the hams who have pioneered this concept. Hams did it first! Give credit where credit is due.

Ken Linder
Henderson, Nev.

Surviving in IT

Mark Gibbs' BackSpin column "How to survive in IT" (DocFinder: 9821) struck a nerve with me. I see it so much in our field: the company asking more and more. I have taken myself off the management track for that very reason. I have a family and a life. I still work weekends and travel a bit, but I go home at 5 p.m. just about every day. Unless it is a network-down emergency, as Cisco would say, my life is more important. I carry only a pager, to keep some distance from the office and the silly calls on the weekends that should never happen.

We just had a mutiny at our department. Personnel haven't been replaced, and staff was going on many back-to-back trips for two, sometimes three weeks a month. Finally, we all said no to another demand for extra travel. I am sure there will be repercussions, but you can only ask so much from your staff. Personally, I wish we would unionize for better treatment, but I know that's just a pipe dream.

During times like this, I remember a quote my father told me: "No one ever said on their death bed, 'I wish I had spent more time at the office.'"

Craig Bonvechio
Twinsburg, Ohio

Getting smart

Regarding the Face-off "Are smart networks worth the investment?" (DocFinder: 9822): As we attempt to wring more efficiencies out of our networks, they will have to get smarter. The key is to figure out what kind of smarts work best.

Cisco's [Application-Oriented Networking] provides a powerful filtering mechanism that is more useful than the current access-list paradigm that primarily relies on addresses and ports. For years, we've wanted fine-grained controls on routing traffic of differing priorities. Current policy routing and QoS selection mechanisms are too coarse.

When I think of the negative points of the smart network, I wonder who is responsible for designing, building and troubleshooting the controls for modifying content within the network? I can imagine a banking transaction being in error as it transits the network. Debugging in this environment is likely to be an order of magnitude more difficult, because there are many additional places where the data can be changed. It is clear that the application development staff and the network staff will have to be much cozier than they have been to make smart networks successful.

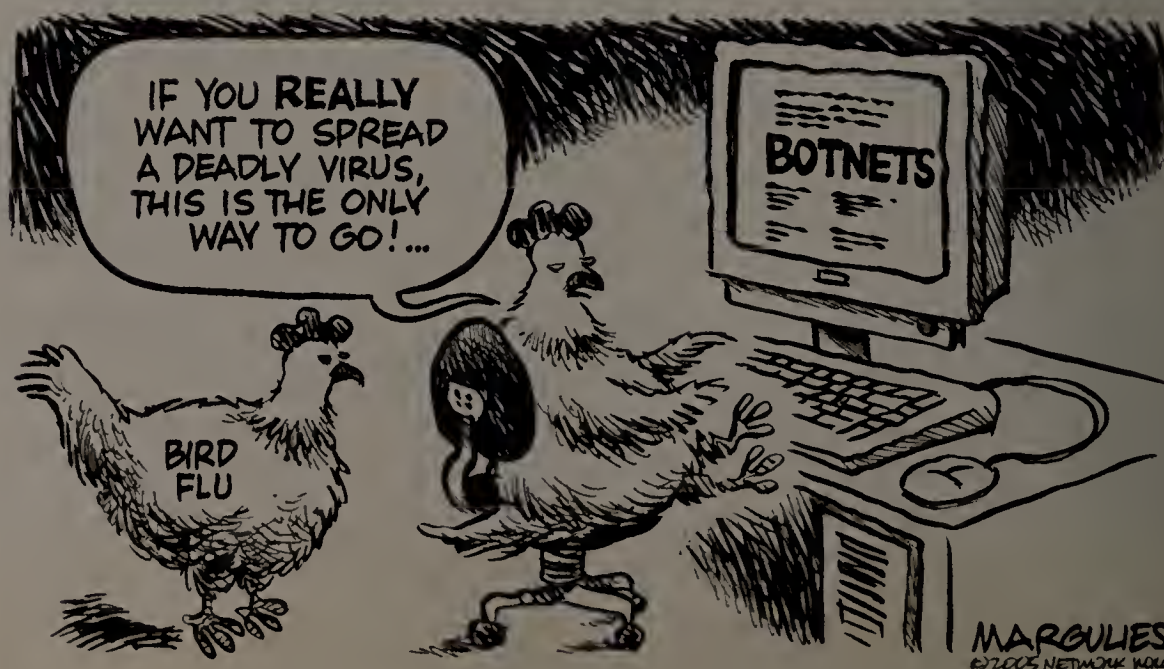
Terry Slattery
CEO and founder
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E-mail letters to jdix@nw.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

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STRATEGY SESSION
Jeff Kaplan

Sorting through software as a service

Software as a service has moved quickly from a peripheral idea to a mainstream phenomenon. While it's often associated with such applications as customer relationship management (CRM) and such providers as Salesforce.com, there are many other software-as-a-service applications and providers addressing numerous other IT and business needs. As the number of alternatives grows, the time has never been better to take advantage of on-demand software to meet corporate objectives.

Software as a service is not a new idea but an outgrowth of the application-hosting companies and application service providers (ASPs) that emerged in the dot-com era. Although most ASPs and hosting pioneers disappeared because mainstream customers were not ready to adopt their products, software as a service today is capturing broader attention and wider adoption because of two key market drivers.

The first is users' escalating frustration with the hassles and costs of implementing complex applications. Stories of failed deployments are widespread, and the exponential maintenance and management costs of keeping successful deployments up and running are well documented. Traditional applications also have been inflexible and unable to respond quickly and easily to fluctuating business requirements.

tuating business requirements.

The second key driver behind the recent surge in software as a service is the emergence of technologies that permit traditional packaged applications to be swapped for Internet-based services. Technologies such as service-oriented architecture, Web services and broadband networking are making software as a service possible.

As a result of these key drivers, the market for

The time has never been better to take advantage of on-demand software.

this application-delivery model is experiencing significant growth. A recent Web survey by Thinkstrategies in conjunction with Cutter Consortium found that almost a third of 118 respondents use software as a service. Another third are considering it, with a majority expecting to adopt it within the next 12 months.

The survey also found that nearly all current users are satisfied with software as a service, expect to acquire additional offerings, and would recommend it to other companies.

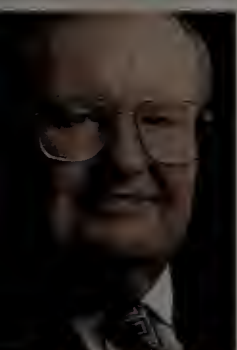
With industry acceptance and adoption on the rise, the competitive landscape for software appli-

cations is being fundamentally transformed. Several independent providers of software as a service have followed Salesforce.com's lead and benefited from successful IPOs in 2005, including CRM-application provider RightNow and talent-management-software company Taleo.

The success of independent providers of software as a service has also disrupted established players. Siebel's fall from atop the CRM and sales-force-automation market and its acquisition by Oracle were direct consequences of Salesforce.com's onslaught. Microsoft's recent promise to deliver Web-based software services in early 2006 is as much about keeping pace with independent providers of software as a service as it is an attempt to counter Google's aggressive moves.

These trends are good for corporate decision makers who are tired of traditional software applications. Intensifying competition will give companies plenty of choices at favorable prices. Now is the time to begin to evaluate and test software as a service in various areas of your IT and business operations to determine how it can satisfy your requirements.

Kaplan is managing director of Thinkstrategies, a consultancy in Wellesley, Mass. He can be reached at jkaplan@thinkstrategies.com.



INDUSTRY COMMENTARY
Frank Dzubeck

Dawn of the consumer communications era

The communications industry has a new focal point. Forty years ago, it was military defense (secure messaging). Thirty years ago, the focal point shifted to the corporate marketplace (IBM's SNA). Twenty years ago, it shifted to the academic world (the Internet). Ten years ago, it shifted to service providers and carriers (cable, cellular wireless, frame relay, ATM, optics and IP). Five years ago, the implosion of the communications industry created a state of turmoil, with no single industry segment the driving force for new communications technology and investment.

Now, that has changed. Over the past five years, the consumer slowly has emerged as the focus of venture capital and technology investment.

Today the corporate marketplace is not following a philosophy of replacement but rather a philosophy of adding on as necessary and accommodating legacy technology. Maturity has arrived, and decisions to upgrade or replace are now business- rather than technology-driven. Security and compliance are the most important issues, rather than upgrades for faster access or greater QoS.

Change is occurring dynamically among service providers and carriers. Ten years after most corporations adopted IP as their unifying communications strategy, carriers have decided to join the fold. The driving force behind this change of heart is the consumer. We now hear service providers and carriers directing such terms at consumers as VoIP, Internet-protocol TV, video on demand, home security, content and triple play.

Venture capitalists are aggressively seeking enter-

tainment or media investments — but they're searching not only for an Apple iTunes killer or the next Google, but also for the next intellectual-property or software-application product or services start-up to sell to Apple or Google. In the consumer-focused reality of 2005, the investment required to achieve a six or seven times rate-of-return exit in a reasonable time frame is extremely difficult for a communications infrastructure or software start-up.

Consumers' buying power and fickleness create constant change in the marketplace. Add to the

Get ready for 21st-century communications — the age of the consumer.

mix the marketplace's orientation to youth with ready disposable income, and we have all the ingredients for selling and delivering hot products and services dynamically via almost any IP network. These market dynamics — high risk, low or medium investment, numerous exit paths, high ROI and short-term focus — are attractive to venture capitalists.

To survive, service providers and carriers have to focus on consumers. Although corporate customers provide the majority of revenue, profits are another matter. Corporate services cost more than consumer services to deliver, manage and maintain. The classic consumer service — voice — is under significant market pressure from competi-

tion and disruptive technologies such as the Internet. Shifting your strategy from transport to services, marginally successful with corporate customers, shows signs of being wildly successful in the high-margin consumer segment. Just look at the cost of a ring tone and you can envision the unbelievable profit margin for services.

The consumer market is also enticing to technologists; its opportunities seem to be unbounded. Peer-to-peer management, instant-messaging and identity-theft security, next-generation personal firewalls, image recognition and retrieval, and digital music and video transmission, storage and retrieval — these are some of the potential areas of the consumer marketplace where technologists could add value dramatically. Skills learned in the corporate and service provider and carrier market segments are not worthless, but in fact are required to upgrade and enhance the consumer communications experience.

Remember, communications technology is not market- or industry-bound; it seeps daily from one market segment into another. After next-generation technology succeeds in the consumer market, it will be only a short time before it morphs and migrates into the corporate and service provider and carrier segments. Get ready for 21st-century communications — the age of the consumer.

Dzubeck is president of Communications Network Architects, an industry analysis firm in Washington, D.C. He can be reached at fdzubeck@commnetarch.com.

California Department of Technology Services implements a new security infrastructure to address compliance needs.



Organizations today do not own the personal information they use. They are its custodians and are responsible for keeping it safe. This is not only a moral responsibility, but also mandated by government regulations.

Protecting personal data was the challenge facing the California State Department of Technology Services (DTS), responsible for providing IT services to government and related organizations throughout California.

The Health Insurance Portability and Accountability Act of 1996 (HIPAA), requires organizations to protect communications containing health information. Under the act, information systems must be protected from intruders and confidential data-in-motion must be secured.

This represented a significant challenge for DTS, as they deliver applications and services through a distributed network of mainframes and client-server based systems. And among these systems is a proprietary healthcare records management application that supports tens of thousands of unique users, communicating with distributed servers on multiple platforms.

In order to comply with HIPAA, DTS had to secure the personal healthcare data flowing through its network. They needed a secure communications network, managed from a central point, that was flexible enough to support the state's heterogeneous environment, and yet scalable enough to cover their user base.

Plus, any solution had to have the necessary audit trails to demonstrate compliance, allowing them to reduce their overall audit costs.

Like most organizations, DTS couldn't afford to replace their existing applications, nor embark on an extensive training program, so any security system they selected had to be transparent to both the users and applications. "We initially evaluated an IPSec solution for our security and compliance requirements, but it lacked the scalability we needed, and simply couldn't handle the multiple operating system platforms we use," said Tim Funk, senior director of IT security, Department of Technology Services.

The Solution: EpiForce

After performing extensive evaluations, DTS selected EpiForce from Apani Networks, the leading provider of security for inside the perimeter. EpiForce is an enterprise scale product that secures data-in-motion and protects data-at-rest, regardless of platforms.

And with the scalability to meet all their present and anticipated future needs, EpiForce enables DTS to support each of its varied governmental constituencies, ranging from the Children's Welfare Department to the University of California.

According to Tom Jones, the former Chief Information Security Officer at DTS, "EpiForce has provided us the flexibility and scalability to effectively support our HIPAA compliance and ensure confidential patient data remains secure".

Not only does EpiForce transparently secure data flows throughout their diverse environment, but it automatically enforces security relationships defined through a centralized management infrastructure. As new security policies are identified, additional users or new associations are established, policies are adjusted centrally and implemented automatically by the system in real time.

Plus the ability to dynamically segment users and applications, creating a range of security zones and closed user groups, was ideal for implementing security policies within large and diverse environments. "Establishing security zones with different levels of administrative authority eased deployment and management challenges", said Funk.

EpiForce enables dynamic network segmentation to automatically enforce security policies



EpiForce provides additional protection for DTS by ensuring that both the sender and recipient of data authenticate and approve each other's data transmittals and receipts, as well as reporting on any "out of bounds" activity.

Implementing this new security layer designed to lock down inside the perimeter enabled DTS to not only meet its obligations under HIPAA, but also to augment its existing perimeter based security, providing it with a security architecture that covers its entire environment, and with the capability to expand to meet the next data security challenge – whatever that may be.

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Honoring 50 companies
and their groundbreaking
network projects



Education All-Stars > These seven projects are chock-full of great connectivity initiatives and cutting-edge security strategies all capable of meeting the industry's unique user challenges. **PAGE 54**



Financial All-Stars > Companies in the financial services industry have long been among the most intense consumers of new technology. These 13 winners are no exception. **PAGE 58**



Government All-Stars > Whether taming unruly applications, improving communications or beefing up security, these five winners showcase how to make great use of technology — all while operating large and incredibly complex environments. **PAGE 66**



Healthcare All-Stars > In an industry renowned for its advanced technology, these nine winners stand out for leading the charge into next-generation deployments. **PAGE 70**



Hospitality All-Stars > As these three winners prove, the hospitality industry is innovatively integrating state-of-the-art communications into all business areas. **PAGE 74**



Manufacturing All-Stars > These five winners exemplify how manufacturers continue pushing the boundaries of the extended enterprise. **PAGE 78**



Transportation All-Stars > As these two winners show, the leading edge in the transportation industry is marked by IT projects that ease the burden of regulation, be that by organizing a trainload of paperwork or assisting with compliance. **PAGE 82**



More All-Stars > These six winners, which span a variety of vertical markets, clearly demonstrate how cutting-edge technology can boost any type of business. **PAGE 86**



Signature Sign-off: Where have you gone, Bobo Holloman? Editorial Director John Gallant shares his insight on how to make sure you're not a flash in the pan but rather an All-Star worth remembering. **PAGE 90**

The Enterprise All-Star Issue is one of six bimonthly supplements providing insights and information on the biggest trends shaping the networked world. Next up is the Power Issue, coming Dec. 26, 2005. See all of our Signature Series issues online at www.networkworld.com; DocFinder: 9824

COVER/LOGO DESIGN BY STEPHEN SAUER

THE ENTERPRISE ALL-STAR ISSUE

THE LINEUP

In a league of their own

★ *The 50 Enterprise All-Stars have network projects so stellar they are examples for all.*

~ By JULIE BORT ~

IN 1933, Chicago's Comiskey Park hosted the first major league All-Star game, showcasing the talents of such baseball greats as Charlie Gehringer and Babe Ruth. That legendary game launched an American tradition, as all-star matchups became an annual highlight of the pro basketball and football seasons, too. In the spirit of this tradition, *Network World* has created the Enterprise All-Star Award, which honors companies with technology projects so stellar they belong in a league of their own.

The 50 companies presented here are Enterprise All-Star Award winners for two basic reasons. First, they have demonstrated exceptional use of technology within an industry segment — education, financial services, government, healthcare, hospitality, manufacturing, transportation and others. Second, their IT projects demonstrate how smart use of technology is smart business. For instance, the All-Star winners that reported savings expect to bank \$161.5 million collectively from their projects one year after implementation — and \$469.4 million by the third year.

As impressive as these figures are, only about half the winners named cost-cutting as a primary objective. Others were more concerned with increasing competitive advantage or bringing on next-generation applications. For instance, Parkview Health System, a healthcare network serving northeast Indiana, earned its place on the list for building a SONET network that gave it "Niagara Falls-size" bandwidth. The SONET net will carry new lifesaving applications such as a virtual monitoring service for intensive care patients.

A project didn't have to be high budget to earn a place on the list. Budgets ranged from \$30,000 to \$32 million; \$640,000 was the median. Of the winners that reported savings, about 60% said ROI would hit 100% within the first year, with half saying ROI would be more than 200% in that time. Only two winners said they did not expect their investment to be fully paid for in hard-dollar savings by the three-year mark (but did expect impressive productivity gains). The message is clear: Even when projects cost millions of dollars, smart ones quickly pay for themselves.

For a case in point, look no further than the project implemented by the Defense Information Systems Agency's Center for Computing Services, at Maxwell Air Force Base in Montgomery, Ala. The agency reported savings of \$140 million in the first year of a three-year, \$3 million revamp of its network management systems. Others reported first-year savings of \$36,000 to \$3 million, with a median of \$686,000.

See the Enterprise All-Star list broken down by technology, and more.

WWW.

networkworld.com/allstar/2005

First-year ROI ranged from about 6% to more than 1,000%, with a mean of 265%.

The roster shows off projects that are beacons of excellence within vertical industries, too. In Las Vegas, for example, Clark County School District undertook a massive VoIP installation that will become the benchmark for others in education. Fortis Prime Fund Solutions, in Boston, implemented corporate iSCSI and demonstrated to the financial services industry that a low-cost alternative can greatly boost storage back-up performance. Beth Israel Deaconess Medical Center, also in Boston, showed the healthcare industry how wireless location tracking can benefit everything from workflow to asset utilization.

The projects also demonstrate technological innovation across nine broad segments: applications, convergence, e-commerce, management, security, servers, storage, WANs and wireless. On one side, Reliant Energy, in Houston, pushed application boundaries by showing that even unstructured data created by word-processing applications can comply with the Sarbanes-Oxley Act. On another side, Lockheed Martin managed the impossible with an outstanding wireless project. In an organization of 30,000 users, most of whom have Wi-Fi-equipped notebooks, this Bethesda, Md., defense contractor locked out unwanted wireless networks and other rogue wireless uses.

And on it goes. Network executives throughout the business world continually undertake daring and innovative projects that pay off. Inside, we herald 50 such projects, inaugural winners of the Enterprise All-Star Award.

WINNERS by the NUMBERS

5 Number of projects with budgets less than \$100,000.

14 Number of projects with budgets over \$1 million.

12 Number of vendors used in more than one project.

15 Number of projects reporting more than 100% ROI in the first year.

1 Shortest project duration, in weeks (Fortis Prime Fund: enterprise iSCSI backup).

74 Total number of vendors used among 50 winning projects.

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West Edmonton Mall > PAGE 74

>Choosing the Enterprise All-Stars

The process of selecting *Network World's* Enterprise All-Star Award winners involved the work of 13 editorial judges over the course of two months. We solicited nominations via e-mail invitations, Web site announcements, online forms and other methods. Judges rated each of the 200 nominated projects on a five-level scale, looking at scope and how well the nominated company applied technology to solve a business problem, among other criteria. High-scoring projects advanced to a final round in which judges rated them on technology innovation and the project's value as an industry example.

Watch for updates on our 2006 All-Star competition at www.networkworld.com; DocFinder: 9823.



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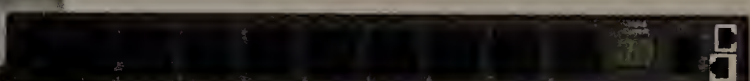
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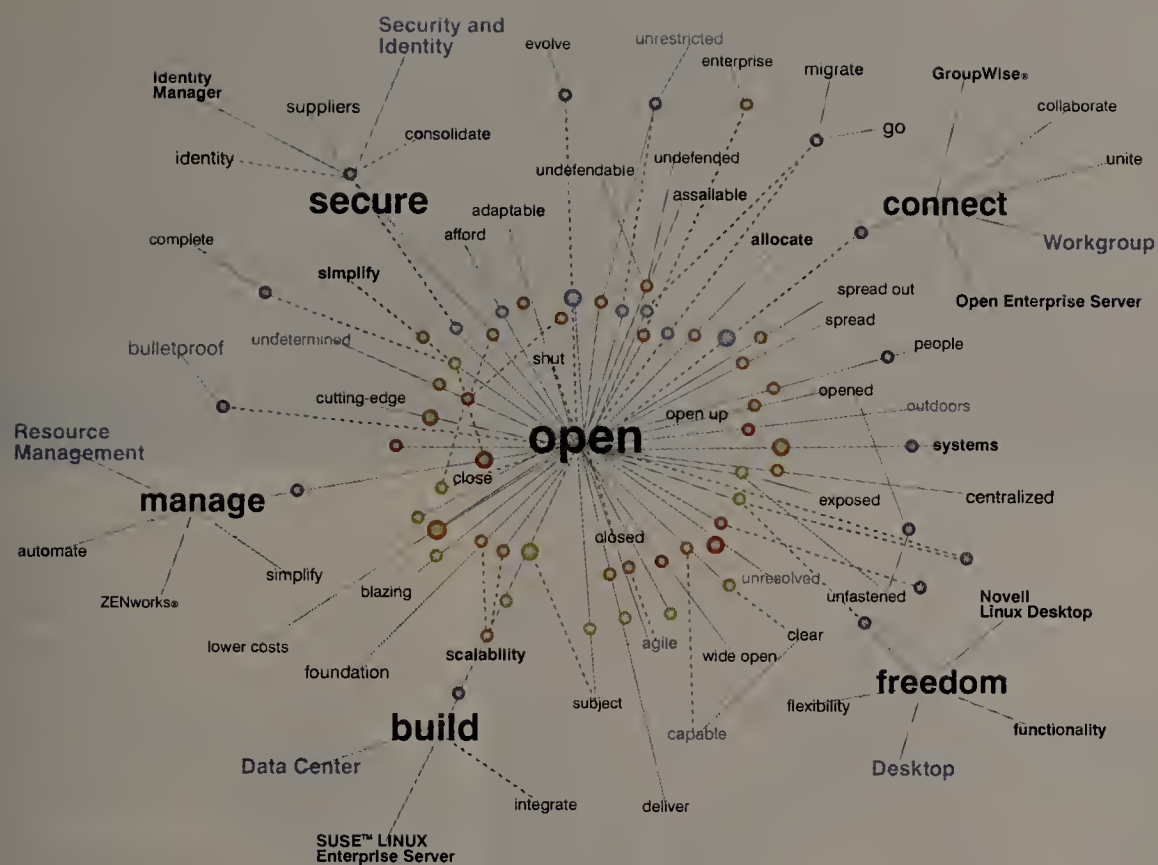
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Education All-Stars



Education must secure a highly PC-literate and demanding user base while supporting bandwidth-hungry learning applications and a free flow of ideas. These challenges make the seven Enterprise All-Star projects chock-full of great connectivity initiatives and cutting-edge security strategies.

QuickStats

- ★ **MEDIAN PROJECT DURATION:**
12 months
- ★ **MEDIAN PROJECT BUDGET:**
\$1.5 million
- ★ **NOTEWORTHY:** Project budgets in this category ranged from \$100,000 to \$32 million, the highest on the All-Star list.



➤ Jack Hsu, IS director (left), and Sam DiGangi, assistant vice provost for IT.

An IDEAL education

★ *Arizona State University gets an A+ for building a unique portal that promises sweeping educational change.*

~ By DENI CONNOR ~

When 3-year-old Elias Hinojosa goes to kindergarten in Tucson, Ariz., he'll have more than crayons, paper and paste at his disposal. He'll also have access to a host of interactive educational tools, thanks to a state-sponsored Web portal built and managed by Arizona State University.

From kindergarten through 12th grade, Hinojosa will head to the Integrated Data to Enhance Arizona's Learning (IDEAL) portal for math and reading practice tests, supplemental online courses, interactive learning exercises and state-required advanced-placement tests. He'll also turn to IDEAL for learning materials, coursework and video resources his teachers have placed there to supplement their classroom presentations.

Ultimately, Hinojosa and as many as 1 million other students will have access to the IDEAL portal, enabled with the open source uPortal software. For now, 300,000 students are authorized to log on to IDEAL to check out sample tests; coursework is not yet available but will be soon.

In addition to the students, the state's 60,000 K-12 teachers have access to the portal, not only to provide supplemental coursework but also for links to student demographics, improvement guidelines, grades and benchmarks. Teachers manage coursework on IDEAL through Sakai, an open source course management and collaboration application.

• The focus of this innovative educational initiative is to use technology to enable lifelong learning, says Sam DiGangi, assistant vice provost for IT at Arizona State University (ASU), in Tempe. "IDEAL is not just access to a Web site, but accounts that will stay with students through their schooling and, conceivably, their entire career," he says.

ASU is building the IDEAL network per a contract with the Arizona Department of Education, which has invested \$5 million in the network. ASU contributes technical and staffing resources. The university is phasing in access on a rolling basis, with all students expected to have authority to use the portal by next August.

For its leadership role in this groundbreaking K-12 learning network, ASU earns recognition as a 2005 Enterprise All-Star.

The IDEAL network

With more than 1 million potential users, IDEAL necessitates a heavy-duty storage infrastructure. At the heart of that infrastructure are two Network Appliance FAS3020 file servers, each hosting 7T bytes of structured and unstructured data. An open source MySQL database, which runs on two Sun Fire v40z servers, hosts the IDEAL data repository. The NetApp file servers and Sun database servers

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Education continued from page 54

connect via ASU's Gigabit Ethernet network, to which the filers connect using iSCSI. ASU hosts the IDEAL application servers and portal software on five Linux-based IBM xSeries 336 servers, and relies on switches from Cisco and F5 Networks for load balancing and network connectivity.

"The biggest challenge is managing the authentication and authorization of students and teachers," says Jack Hsu, director of IS and network management at ASU. "We have 350,000 users authenticated and authorized, but have over 1 million overall users to authorize."

To authenticate portal visitors, ASU uses the open source Central Authentication Service, developed at Yale University. To authorize them, it uses an internally developed program called Enterprise Dynamic Network Authorization. ASU expects to dedicate as many as four servers to the authentication and authorization tasks.

For redundancy and fault tolerance, ASU has situated the NetApp file servers 1,000 feet apart. Although the file servers are at different data centers, ASU plans to further separate the two for fuller redundancy. Next fall, the university will move one of the file servers to a facility in downtown Phoenix, 18 miles away, DiGangi says.

The file servers run NetApp SyncMirror software, which mirrors data to the remote server in real time. If a failure occurs, users and teachers are switched to the remote system without disruption to client applications. From one file server, ASU also uses SNAPmirror to mirror data to a NetApp NearStore R200 for archiving purposes.

ASU has equipped each filer with Serial Advanced Technology Attachment (SATA) drives instead of more expensive Fibre Channel drives, and protects those drives with NetApp's RAID-DP (double parity) technology for increasing data fault-tolerance.

But the configuration is flexible enough that if ASU decides the SATA drives are not up to par, it will be able to pop in Fibre Channel drives instead, Hsu says.

ASU keeps costs in check for the IDEAL network by using technologies such as iSCSI and open source software.

"Everything in this project is open source, so that in itself is a huge cost savings, not just in initial but in ongoing costs," Hsu says, noting that ASU has been running Linux for three to four years. "Then we used iSCSI, which really makes our costs go down. All the Fibre Channel expenses add up. We've saved a few hundred thousand right there."

iSCSI also will save money in support costs, Hsu says. "iSCSI is just like Ethernet from the support perspective — and we already have people who know how to manage Ethernet."

So for Hinojosa, if all goes as planned, a lifelong relationship with IDEAL is in the future (or at least as long as his parents stay in Arizona). ■

>More Education All-Stars



CLARK COUNTY SCHOOL DISTRICT

• **PROJECT LEAD:** Philip Brody, CTO

• **TECHNOLOGY FOCUS:** Convergence — VoIP

This Las Vegas school district has undertaken a massive IP telephony project aimed at placing a phone in every classroom to improve parent-teacher communication and school safety. Ultimately, the \$32 million project will entail 27,000 phones at 317 sites, providing a standard set of features and E911 across the network. Clark County School District expects to save \$1.5 million to \$2 million annually in administrative and operational costs vs. the spending required for a Centrex alternative. With help from Verizon, CCSD built the VoIP infrastructure on top of a Gigabit Ethernet WAN using Alcatel's OmniPCX Enterprise IP phone system.

COPPIN STATE UNIVERSITY

• **PROJECT LEAD:** Ahmed El-Haggan, vice president of IT and CIO

• **TECHNOLOGY FOCUS:** Convergence — VoIP and wireless LAN

In a multifaceted, \$1.5 million project, this Baltimore university deployed a converged IP infrastructure supporting all voice, data and video applications over a secure Gigabit Ethernet backbone. A campuswide wireless LAN (WLAN) supports indoor and outdoor mobile access. Coppin State has loaded up "smart classrooms" with audio, video, computer and other tools that it can centrally monitor and manage. Should equipment be removed from one of these classrooms, facilities managers are immediately notified via their wireless 802.11 phones. The university uses Nortel gear, including its Ethernet Routing Switches, the Threat Protection System, switched firewalls, VPN gateway, application switches and CallPilot for unified messaging. Coppin State says the network transformation has helped it boost enrollment and land new grants and financial support from alumni.

SCHOOL DISTRICT OF PHILADELPHIA

• **PROJECT LEAD:** Bob Westall, executive director, technology services

• **TECHNOLOGY FOCUS:** Convergence — Optical Ethernet infrastructure, IP telephony

An optical Ethernet backbone is enabling the School District of Philadelphia to meet its new "Every Child is Connected" initiative. Powering the network are Nortel's Ethernet Routing Switch 8600 and Ethernet over SONET through Resilient Packet Ring on an Optical Metro 3500 SONET platform. IP voice calls pass onto the optical backbone via IP PBXs connected to the Ethernet switches. The SDP has connected its 264 schools, delivering 1,000 times the bandwidth previously available. The SDP now provides in-class videoconferencing, streaming video, virtual schooling and voice messaging, among other applications. In addition, students can connect from home, teachers can support real-time, online exams and grading, and parents can access online student records. SDP has invested tens of millions of dollars in the network. It expects to recoup the cost within three years.

UNIVERSITY OF ARKANSAS

• **PROJECT LEAD:** Craig Brown, associate director for computing services

• **TECHNOLOGY FOCUS:** Wireless — wireless mesh network

The IT team at this university faced a big challenge when searching for ways to deliver wireless connectivity from any spot on this wooded, hilly campus in Fayetteville, Ark. After ruling out hard-wired access points as physically infeasible, the IT team decided on a wireless mesh network. With a \$100,000 investment, the University of Arkansas built a wireless mesh network and opened Internet and e-mail access to the 16,000-member student body across nearly all of the main campus. The university deployed Nortel's Wireless Access Point 7220 with auto-discovery and self-routing technology, plus the Wireless Gateway 7250, which enables user mobility and secures data on the network. The network also provides connectivity for public safety officers.

UNIVERSITY OF MIAMI, MILLER SCHOOL OF MEDICINE

• **PROJECT LEAD:** Chris Bogue, IT director and information security officer

• **TECHNOLOGY FOCUS:** Wireless — wireless LAN

IT executives at the University of Miami, Miller School of Medicine have a goal to provide secure wireless coverage through the sprawling medical center for guest users, registered users, mobile carts, PDAs and voice services. IT has established a "community cloud," providing 1.5 square miles of outdoor wireless coverage for a wide range of facilities. Within the next two years, the IT leaders expect a pervasive network will carry 700 to 2,000 wireless connections on a sustained basis. The medical school has invested more than \$800,000

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Financial All-Stars



The financial services industry has long been among the most intense consumers of new technology. The 13 winners here are no exception, whether they have implemented state-of-the-art business-centered management, Web services or efficient converged networks.

QuickStats

- ★ **MEDIAN PROJECT DURATION:** 12 months
- ★ **MEDIAN PROJECT BUDGET:** \$160,000
- ★ **NOTEWORTHY:** With 13 winners, financial services comprises 26% of the All-Star list.



MPLS pays off

★ *State Street gets productivity gains, network efficiencies and business-enhancing services from its new, advanced WAN architecture.*

➤ Gordon Bither, senior vice president, integrated network solutions, State Street (at left), with his vice presidents of network architecture (left to right): Richard Hamm, Steve White and Paul Sullivan.

~ By BETH SCHULTZ ~

When it comes to its next-generation network infrastructure, State Street takes no shortcuts. "The devil is in the details," says Gordon Bither, senior vice president for integration network solutions at State Street, the world's largest institutional investment firm with \$9.8 trillion in assets under custody.

Such an attitude led State Street to create a MPLS network for carrying converged voice, data and video simultaneously over two carrier networks, dubbed an active/active architecture. With active/active, traffic travels the shortest routing path, jumping from one carrier network to the other as necessary.

Detail-mindedness also led State Street to create six standardized architectural models for funneling traffic from global offices to its data centers, and eight models for client connectivity. Among the client models are Gold and Silver options. Gold, the high-

est availability service model, provides two routers for dual-carrier connectivity, says Steve White, vice president of network architecture and design at the Boston company. With Silver, two routers connect into a single carrier network, with ISDN for recovery, he says.

As of April, State Street has tied its eight data centers, 90 global offices and more than 250 clients to the new network, with nary a hiccup.

Validation first, contract second

Bither and State Street network engineers were thorough in plotting State Street's migration from the multicarrier frame-relay network it managed internally to the MPLS architecture it would rely on carriers to manage. Before they signed a contract, they wrote an architectural white paper for carriers, conducted 115 reference calls and spent 10 months gathering data on the carriers' global networks. They selected AT&T and MCI in November 2003, but didn't ink the contract until four months later. In the interim, State Street officials completed terms and conditions and set aggressive service-level agreements with the partners.

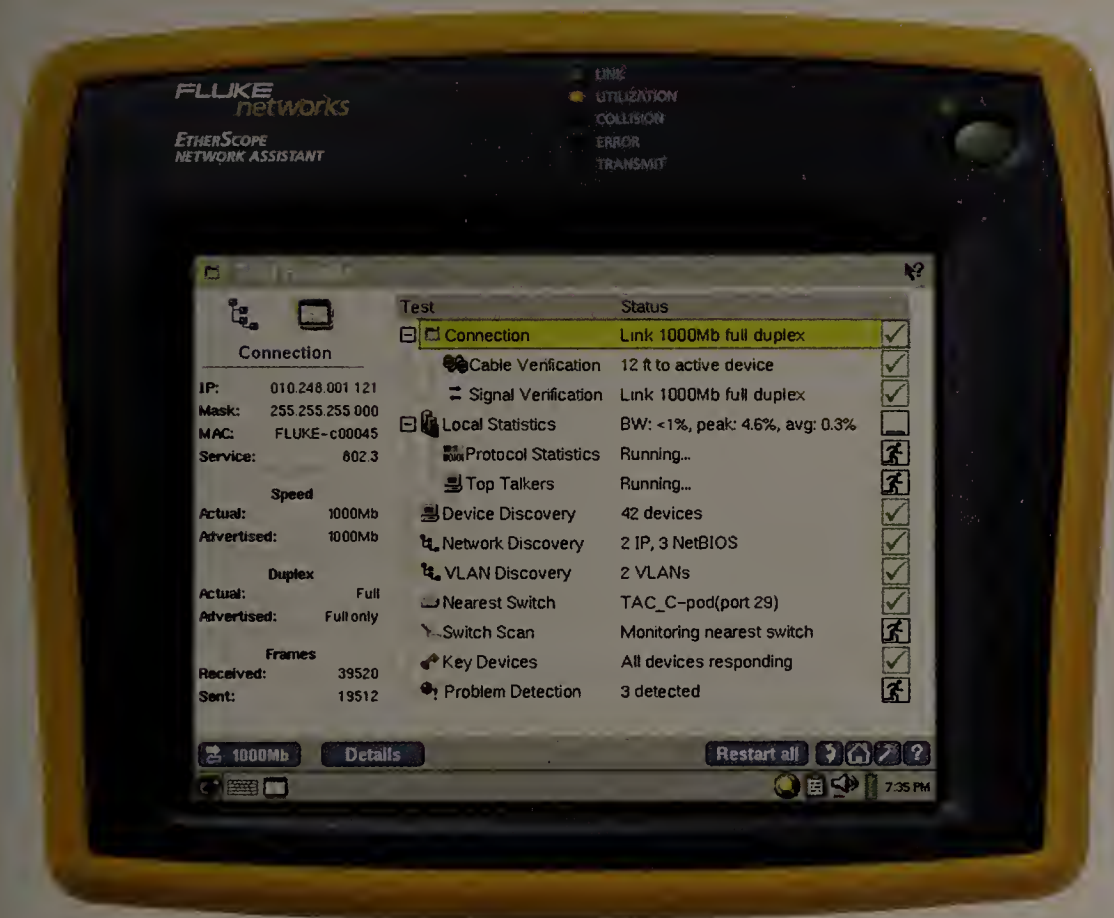
In another eight months of heads-down engineering, the MPLS team replicated the State Street WAN with a 72-router lab environment, and reverse-engineered the carriers' MPLS networks on that simulated backbone. Before it turned on the first site in October 2004, the project team validated all design models and thoroughly tested the MPLS architecture. "We had a very structured understanding of what we wanted to do," White says. "When the carriers' core engineers came here, we solved complex problems together, but we drove everything."

From the get-go, the project team understood that this new network would have to rely on enabling technologies, such as QoS. That way, if a business manager asked for videoconferencing, White could say, "No problem. We can do that today because we have QoS, and availability is baked into the architecture."

In the frame-relay days, a videoconferencing request could have sent engineers scrambling

See Financial, page 62

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—Rick Dempsey, Chief Information Officer, Rayovac



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to come up with a custom approach for involved sites. The frame-relay network had become overly complex and inefficient, growing as a series of these point solutions, Bither explains. Ultimately, about 18 service providers — one international and many regional carriers — provided the connectivity for that aged hub-and-spoke architecture.

In 2002, the frame-relay network situation had become untenable. The WAN had become a constant in the company's daily report on IT problems, and it was negatively affecting business. Bither relates his experience: "[The report] would come out at 8 a.m., and I would get a call from the CIO shortly thereafter to address the WAN issues."

As network executives began thinking about architectural options, MPLS topped everyone's minds. "MPLS was always our desired goal, with convergence in mind," Bither says.

Also clear to Bither and the executive management team was that State Street needed to get out of the business of managing its WAN services. "By outtasking WAN [moves, adds, changes, delete] work, addressing and those types of jobs, I was able to hire higher-level resources who understand the overall architecture and the business," he says. "We maintain the thought leadership and allow others to do the repeatable process as a managed service."

With its months of net modeling, State Street made sure its managed services providers could handle the job. "The success of a managed-services environment is to design your environment around the managed service. Your models and your architecture need to support the service provider's ability to provide what you're looking for," White says.

But Bither didn't want to be too rigid: "You can't demand something of a service provider that a service provider can't provide," he says.

A standardized, supercore model

State Street's due diligence in designing the fully managed, dual-carrier, active/active MPLS network has paid off — time and again. More than once, either the AT&T or MCI portion of State Street's global MPLS network has failed, with no impact on the customer, because traffic is load balanced across the networks, Bither says. "No one has known, and I like it that way," he adds.

Plus, with the day-to-day tasks out of the way, Bither's network specialists can focus on how to capitalize on MPLS. They're implementing multicasting and VoIP from Cisco, for example.

State Street leverages a supercore architecture interconnecting redundant hubs in eight global locations. Each node comprises various Cisco switches — from the high-end Catalyst 6500s to the low-end 3700s. Traffic from metro Ethernet LANs is consolidated within the supercore hubs, which themselves are linked over a dual-carrier dense wavelength division multiplexing network. This model facilitates State Street's ability to control routing within a region while maintaining any-to-any connectivity across the globe, White says. "Although there is complexity associated with this, we've kept the design as simple as possible and have driven out human intervention" by establishing highly structured repeatable processes and the 14 standardized architectural models, he adds.

The MPLS project team rarely needs a custom approach for any business request, a huge improvement over the frame-relay days, Bither notes. Obviously, this also means productivity has skyrocketed — "all that's required is a quick look to make sure the bandwidth is properly engineered," he says. What's more, in the six-plus months since the network went live, it hasn't once appeared in a daily problem report, and response times have improved 10% to 25% globally.

State Street's project proves again that a no-short-cut approach is often the fastest route to improvement. ■

>More Financial All-Stars



CITIGROUP

- **PROJECT LEADS:** Executives with Citibank Technology Infrastructure
- **TECHNOLOGY FOCUS:** Management — configuration and change management

In a \$1.5 million project, Citigroup wanted to find a product that could provide all the reporting, governance, inventory and configuration functions, such as rollout and rollback, that it had been doing manually, while instituting workflow and process best practices. Citigroup selected AlterPoint's DeviceAuthority change and configuration management software, and is already reporting benefits. For example, it has reduced the time required to manage access lists across devices from about five staff members working three days to one working fewer than seven hours. It also nearly eliminated manual remediation. The New York global giant has 44,000 network devices, in support of 300,000 employees.

FARM CREDIT SERVICES OF AMERICA

- **PROJECT LEAD:** Beth Schmidt, director, application development
- **TECHNOLOGY FOCUS:** Applications — CRM integration

Farm Credit Services of America, a provider of credit services for farmers in Omaha, Neb., undertook a \$1.3 million project to build a Microsoft .Net Framework-based application that creates a single integration point for four customer-related systems. The application, called Pinwheel, has increased employee productivity by 70%. The firm uses Microsoft's BizTalk Server 2004 Enterprise Edition to manage and exchange data among the systems. Previously, such updates meant running lengthy batch processes nightly.

FIDELITY INVESTMENTS

- **PROJECT LEAD:** Joe McKenna, vice president of architecture and engineering
- **TECHNOLOGY FOCUS:** Management — business services management

Fidelity Investment's critical IT infrastructure includes more than 150 F5 Networks load-balancers managing more than 35,000 endpoints, which produce more than 45 million daily page loads. Fidelity's Integrated Monitoring Center (IMC) carries the burden of keeping this online environment, for trading and other applications, running smoothly 24/7. IMC recently implemented a business services management (BSM) strategy via Managed Objects' End-to-End Service Manager. This BSM tool consolidates and correlates network and systems management information into a single, real-time centralized view, enabling the IMC to mitigate problems quickly. With the tool, the IMC can direct the load balancers to divert traffic around trouble spots. This can take as few as five seconds vs. the 60 minutes of old. Benefits to the Boston firm include increased productivity and improved customer satisfaction.

FIFTH THIRD BANCORP

- **PROJECT LEAD:** James Lancaster, vice president
- **TECHNOLOGY FOCUS:** Management — integrated application management

Fifth Third Bancorp set out to improve the way it detects and analyzes root causes and correlates events on its 40,000-node network. It turned to EMC Smarts, which integrates several applications to provide a unified view across IT domains and automated root-cause analysis. Additionally, Smarts integrates with the bank's Remedy help-desk system, for automated trouble-ticketing. The financial services firm in Cincinnati has cut the time it takes to resolve network outages by 40%. The implementation, including new hardware, cost \$160,000.

FORTIS PRIME FUND SOLUTIONS

- **PROJECT LEAD:** Chuck Thompson, IT and facilities manager
- **TECHNOLOGY FOCUS:** Storage — iSCSI for backup

In a one-week, \$100,000 project, Fortis Prime Fund Solutions reduced back-up time by 30%, significantly improving business continuity and data availability at offices in North America, the Caribbean (IT operates from Grand Cayman Island) and Europe. To do so, this mutual fund administrator implemented an enterprise-scale iSCSI-based storage-area network (SAN) along with automated data replication and provisioning tools. The IT team can now focus back-up and replication efforts only on data that is likely to change, while provisioning static data to separate volumes on the SAN, built using EqualLogic's PS Array.

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SSL VPN Grows Up

SSL is becoming the VPN technology of choice, with products from vendors like Array Networks delivering high performance, ease of use and cutting-edge security — at a low cost.

It wasn't long ago that the Secure Sockets Layer (SSL) protocol was used chiefly as a means of providing secure connections to Web sites, such that consumers would feel comfortable sending their credit card and other personal data over the Internet. Today, SSL is increasingly being used for corporate virtual private networks (VPNs) providing secure access to various corporate resources for an organization's own users as well as customers and business partners.

SSL VPNs are being deployed as an alternative to VPNs based on the IP Security (IPSec) protocol, and with good reason. SSL VPNs are far easier to deploy because they require only a Web browser to be present on the client machine. IPSec requires client-side software, which means IT must "touch" every client that is to participate in the VPN.

SSL VPNs also provide more security options. If a computer connected via IPSec is infected, it can quickly infect the rest of the network. SSL VPNs from companies such as Array Networks act as a full reverse proxy, creating a "virtual divide." The user's session is terminated at the VPN device, so the user never has a presence on the network. That enables the system to ferret out and drop suspicious connections before they do any damage.

At the same time, today's SSL VPNs offer more functionality than the previous generation, such as highly configurable access control capabilities that include a security health check on each client, improved manageability without costly agents on each end point, and the ability to provide access to virtually any corporate IT resource, from applications to printers.

An Exploding Market

Customers are getting the message. IDC says the market for SSL VPN appliances—the most prevalent form of SSL VPN—was \$200 million in 2004, up an "incredible" 172% from the prior year. By 2009, IDC estimates the market will reach nearly \$900 million in revenue, a compound annual growth rate of 35% from 2004.

In its March 2005 report on the SSL VPN market, IDC says it believes the market for clientless solutions will be "extremely dynamic" in coming years, with "exceptional growth, predicated on continued deployment of Web-based remote access applications and services." But growth won't be limited to remote access; SSL VPN use within a corporate LAN will likewise greatly expand as companies seek to provide tighter access controls to corporate resources from within their own walls, IDC says.

Given the expanded role that SSL VPNs are now playing, researchers at Frost & Sullivan even came up with a new name for the product category:

Features/Benefits

Requires only common Web browser for secure access

Client-side security downloaded on-the-fly

- Host checking
- Cache cleaning
- Secure desktop

Multi VPN capability

- Webified applications
- Client/server
- File sharing
- Layer 3 VPN
- IPSec migration

Granular access control

- Authentication
- Authorization
- Auditing

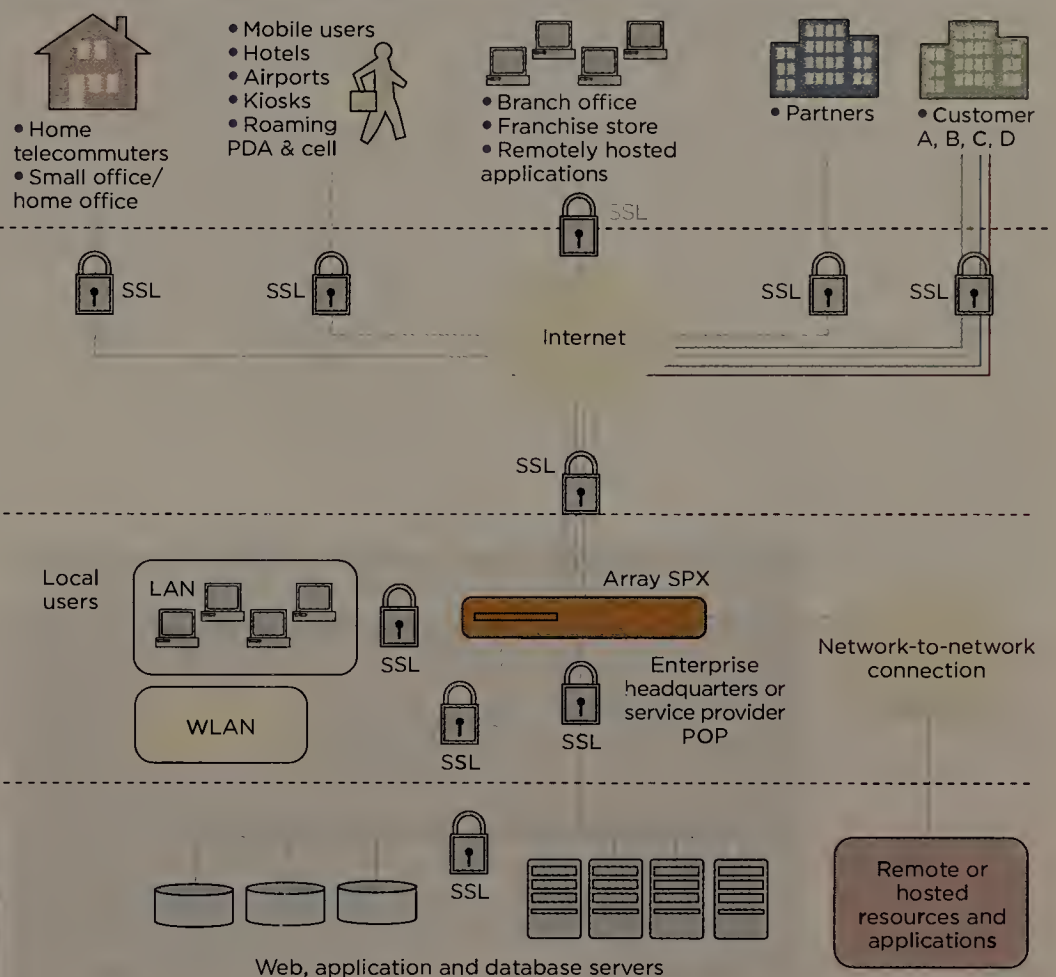
Purpose-built platform

- Remote/local access
- Up to 64,000 concurrent users
- Lower latency than IPSec
- Integrated firewall
- Security-hardened OS
- High availability
- Application filtering

Unique solutions

- Citrix replacement
- Web resource mapping
- E-mail proxy
- 256 virtual portals
- Application acceleration
- Intelligent desktop management

Evolving to Universal Access with SSL VPN



Resource Gateway.

Frost & Sullivan argues that the term "SSL VPN" doesn't adequately describe what products in the category do. From an enterprise user's perspective, the objective is to provide "a means to control and optimize end user interactions with useful resources," Frost & Sullivan says in its August 2005 report on SSL VPN's. Those resources can include not only business applications, but file shares, network-connected devices such as printers as well as other end user machines, Frost & Sullivan says.

To compare the various products in the market, Frost & Sullivan rates them on each of three functional requirements: connectivity, security and performance. The company assigns each vendor to either the lower tier or upper tier in each category.

Array Networks Shines

Frost & Sullivan puts Array Networks in the top tier in each of the three categories. The Array SPX Series SSL VPN products combine three attributes that Frost & Sullivan says are essential for success: scalability, functional extensibility and adaptability.

In terms of scalability, Array's SPX Series supports up to 64,000 users and 100,000 simultaneous connections per device, with throughput of up to 850M bit/sec—making it the world's fastest and

most scalable SSL VPN product. Array Networks' systems perform eight times faster and scale 12 times higher than the nearest competitor. Array also supports as many as 256 virtual portals on a single system, enabling users to create "instant DMZs" that segment different user communities. All this adds up to Array delivering the lowest total cost of ownership to its customers.

It should be no surprise, then, that Array products are deployed in some of the largest, most demanding organizations, including four of the world's top 10 banks, five of the top 10 communications service providers and more than 20 percent of the Global 2000 enterprises.

As Michael Suby, a senior research analyst with Frost & Sullivan and the author of its report puts it, "Array is one of the limited number of vendors with broad functionality in all three functional categories—connectivity, security and performance."

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GMAC COMMERCIAL HOLDING**PROJECT LEAD:** Mike Sava, assistant vice president, corporate LAN/WAN infrastructure**TECHNOLOGY FOCUS:** WAN — MPLS network for backups

GMAC Commercial Holding's MPLS twist is its use of the WAN technology — and traffic shaping — to enable remote office backups. IT installed remote agents on each server, removed existing back-up software and did away with local media. As of late October, IT had converted 95% of its 44 U.S. sites to central backups from headquarters in Horsham, Pa., dramatically lowering completion time for file operations and improving productivity. IT expects to save \$400,000 in the first year, with the project having cost \$75,000.

H&R BLOCK FINANCIAL ADVISORS**PROJECT LEAD:** Scott Thompson, head of application development, Kansas City**TECHNOLOGY FOCUS:** Applications — SOA management

H&R Block built a service-oriented architecture (SOA) that aggregates about 2.5 million leads each tax season. After qualifying the leads, the Client Acquisition System (CAS) routes them to financial advisers based on specified criteria. The CAS team uses Tibco Software's BusinessWorks to manage the execution of 15 Microsoft .Net Web service requests per lead (under peak volume, CAS processes more than 4 million Web service requests a day). AmberPoint's SOA management tools provide a centralized view into all services-based interactions and automate the exception-handling process. The project has resulted in a 20% reduction in development costs, streamlined staffing requirements and improved licensing for the Detroit tax services firm. H&R Block cut \$2 million in pending license fees and increased cross-service revenue by over 46%.

LEHMAN BROTHERS**PROJECT LEAD:** Tom King, chief information security officer**TECHNOLOGY FOCUS:** Security — identity management

Lehman Brothers wanted to enforce and automate user-access rights to better meet stringent regulatory and privacy requirements. Using Thor Technologies' Xellerate Identity Manager and Total Access Control provisioning system, this New York investment bank now provides identity management for more than 22,000 users, who have more than 400,000 unique system accounts across 1,400 business-critical applications. IT can set up new user accounts in 20 minutes and deny user access in 60 seconds, saving 1.3 man-years in four months of automated provisioning for major platforms alone.

PRINCIPAL FINANCIAL GROUP**PROJECT LEAD:** Jim Wittry, IS network administration**TECHNOLOGY FOCUS:** Security — SSL VPN

With 74% of employees spending at least one hour each week working remotely, Principal Financial Group faced a remote-access imperative. For comprehensive remote access, the Des Moines, Iowa, company migrated to an SSL VPN. With the new VPN, IT can enforce endpoint security policies, meet data encryption requirements and distinguish among corporate, home user and PCs outside its circle of trust. For users, broadband connectivity is available via Ethernet, wireless LAN or 3G cellular data service, for example. For the \$400,000 project, IT deployed an SSL VPN server cluster, personal firewalls with central policy management and hard-drive encryption software. Principal attributes a 50% productivity improvement to the SSL VPN.

PRUDENTIAL FINANCIAL**PROJECT LEADS:** Jim White, vice president, and Chuck Pagano, vice president**TECHNOLOGY FOCUS:** WAN — MPLS network

Prudential Financial has seen the last of its frame-relay days. In four months, with an average of 20 locations per week, the network team at the Newark, N.J., company rolled out 235 Cisco routers, 545 Cisco Ethernet switches and more than 300 WAN MPLS and private lines. Through the

Education continued from page 56

>More Education All-Stars

to support its mobile healthcare strategy. Technology in use includes Meru Networks' WLAN System, a voice-activated communications system from IBM and Vocera Communications, and a wireless bridge to provide a link between remote locations and the University of Miami Medical Center. IT expects to earn an ROI from efficiencies gained in mobilizing the workforce and providing real-time communication tools.

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL**PROJECT LEAD:** Mike Hawkins, associate director of data networking**TECHNOLOGY FOCUS:** Security — intrusion detection and prevention

TO combat fast-moving virus attacks, the University of North Carolina at Chapel Hill built an automated virus response system that combines off-the-shelf security wares with custom programming. The IT team topped off existing in-line intrusion prevention appliances with Enterasys Network's Dragon intrusion-detection device, Dynamic Intrusion Response from Intrusion Prevention technology, and NetSight Network Management Software tools. With this setup, UNC can identify virus hits and isolate user machines by moving them to a remediation virtual LAN. During this process, every step is recorded in a Remedy trouble-ticket system. The average time from getting a virus signature to isolating the user machine is now only 30 seconds. Plus, IT reports reducing the number of virus infections and compromised machines by 70% from the fall of 2003 to the fall of 2004.

\$1.5 million project, Prudential has increased bandwidth to a full T-1 at all remote locations. With that bandwidth comes a host of new applications, such as streaming video to the desktop, office-to-office file sharing and VoIP-enabled training. IT expects to save \$900,000 in the first year and \$3.7 million by the third year.

STATE STREET GLOBAL ADVISORS**PROJECT LEAD:** Tom Dever, senior storage engineer**TECHNOLOGY FOCUS:** Storage — SAN management

TO support its global asset-management operation, State Street Global Advisors in Boston runs a host of investment-related applications on about 250 servers linked to a Fibre Channel-based storage-area network (SAN). As the SAN reached a volume of about 200T bytes of disk storage and another 720T bytes of tape storage, management became daunting. SAN administrators make roughly a dozen changes, each involving multiple physical and logical tasks, daily; nearly 80% of SAN problems stem from these changes. To address the issue, it deployed Onaro's SANscreen software, which automatically discovers SAN devices, models the network and then predicts the effects of real or planned changes. Since deploying SANscreen in April, State Street Global Advisors operates with approximately 20% less storage gear because administrators can more easily reassign hardware resources. The company realized ROI in seven months based on operational efficiencies.

UMB BANK**PROJECT LEAD:** Bill Taylor, assistant vice president and manager, network services**TECHNOLOGY FOCUS:** Convergence — VoIP management

A thorough performance-management study must come before a VoIP migration. That's the strategy of Kansas City, Mo.-based UMB Bank, which uses NetScout Systems' nGenius performance-management system to gain detailed insight into virtually all applications and get historical reports on network performance. It also uses the system to monitor network activity; with Web-based reports, IT can forecast where adjustments will be needed once it adds voice into the traffic mix. Business benefits from the \$120,000 project include the ability to protect critical revenue-impacting applications.

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Government All-Stars



Whether taming unruly application use, improving communications or beefing up security, these five government projects have two things in common. They must integrate with incredibly large and complex environments, and in these fiscally delicate times, they must be able to prove hard-dollar monetary value.

QuickStats

- ★ **MEDIAN PROJECT DURATION:**
24 months.
- ★ **MEDIAN PROJECT BUDGET:**
\$22.5 million.
- ★ **NOTEWORTHY:** *The highest average ROI on the list occurs in the government category.*

Mining SIM

★ *Security information management helps the Mine Safety and Health Administration boost its security score from F to B.*

~ By DEBORAH RADCLIFF ~

IN late 2004, a version of the Welchia worm hit the Mine Safety and Health Administration network, its ping of death disabling 17 remote offices in an hour. That's when George Fesak knew he had made the right decision to invest in security information management (SIM).

"It took less than three hours to block the Welchia traffic, quarantine the 298 infected machines and restore connections to our 17 field offices," says Fesak, who is director for Program Evaluation and Information Resources (PEIR) at MSHA, a U.S. Department of Labor (DOL) agency in Arlington, Va. "Right there was the ROI. I remember when ILOVEU tore through here without SIM in place. It took us four or five days to get our people back to work."

Using netForensics' nFX Open Security Platform, MSHA security engineers and network administrators can see security events as they unfold, changing security configurations. The system integrated with MSHA's intrusion-detection systems, firewalls, routers and SSL VPN devices to take network event information for analysis and correlation. Using nFX wizards to create agents for MSHA's critical business servers, administrators created role-based connectivity for departments requiring access. In this way, the security, operations and applications groups can get correlated intelligence on the gathered data as needed.

Fesak credits much of MSHA's success to Syed Hafeez, information systems security officer for the agency. Since 2001, Hafeez has worked with the organizational business units to raise awareness and involve the business in structural security upgrades. In March 2003, Hafeez undertook the SIM project, completing Phase I (security device integration) and Phase II (server integration) in October that year.

SIM has had a major impact on MSHA's security ratings. Less than one year into the deployment, MSHA's security score within DOL increased to an "all green." This in turn contributed to the DOL's overall Federal Computer Security Compliance Scorecard grade, issued by the Office of Management and Budget, rising from F to B. The effort also lifted MSHA's security scores from low to one of the best at the agency level using that scorecard, says Jay Mattos, MSHA's deputy director.

"This project honed in on being able to supply security awareness at multiple technical and business levels in real time, without an entire SOC [security operations center] infrastructure added on," Hafeez says. "Now, security, operations and application groups have a comprehensive view of security data in any configuration they need."

For such drastic improvements in security awareness, compliance and management, without the major cost of building a SOC, MSHA earns 2005 Enterprise All-Star recognition.

New guidelines and standards

The SIM project flowed out of the DOL's 2003 adoption of a governance process for its enterprise architecture, done in part to meet

See Government, page 68

➤ Syed Hafeez,
Information systems security officer, MSHA



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ZULTYS

VoIP vs. VoIQ



Government continued from page 66

Federal Information Security Management Act (FISMA) guidelines for recommended security controls. Based on the National Institute of Standards and Technology standards, FISMA's regulatory compliance directive dictates enforcement, accountability, and consistent reporting policies and procedures on three years of retained event log data.

But MSHA, with nearly 2,300 users spread over 100 offices nationwide, was logging 2G bytes of security event data every hour just on its firewalls, let alone its other security devices.

"MSHA runs very lean. We did not have the budget for an expensive SOC to manage all the security data. And it's not humanly possible to watch raw data and mentally correlate it in real time, so we had to architect an environment that relied on centralized automation with minimal security-specific skill sets," Hafeez says. Automation leverages current resources and skills, he adds, and SIM was the least costly way to absorb security into the network management infrastructure.

A configuration board, comprising managers responsible for security, operations and applications, spearheaded the SIM project. All board members participated in the SIM tool selection.

"Most of the SIM tools at that time were too complex and lacked the integration, incident response and reporting features we needed," says Hafeez, who settled on nFX (which starts at \$40,000 to cover 10 servers) because of its real-time notification and seamless integration with MSHA's existing security technologies.

The SIM project paid for itself not only by streamlining event discovery and mitigation but also because it aggregates raw event information for more efficient storage — easily helping MSHA meet the three-year retention mandate, Hafeez says. With real-time correlation on actionable events, the SIM project also has been successful at involving the business units in making informed decisions as events unfold.

For example, after evaluating the SIM data taken from the Welch virus, MSHA realized it needed to audit and review firewall rules periodically and to better protect the 1,200 remote laptops used by field inspectors and trainers logging in from insecure access points around the world. So Hafeez's team streamlined and automated patch management using Shavlik Technologies' HFNetChk Pro and Microsoft Systems Management Server, implemented a remote access policy using Juniper Networks' SSL VPN gear and is working toward deploying Sygate On-Demand software for laptop security policy enforcement.

"Just being in paper compliance doesn't do much for actual security," Mattos says. "With Syed's guidance, we understood we needed automated assistance to augment and correlate the stand-alone security systems we already had in place. We needed a SIM solution."

Radcliff is a freelance writer in northern California. She can be reached at deb@radcliff.com.

★SIM tips

Syed Hafeez, information systems security officer for MSHA, has been through the SIM ropes. Get his management tips, and more, online: www.nww.com; **DOCFINDER: 9736.**

>MoreGovernmentAll-Stars

DEFENSE INFORMATION SYSTEMS AGENCY (DISA), CENTER FOR COMPUTING SERVICES

- **PROJECT LEAD:** Rick Fleming, enterprise systems management project manager
- **TECHNOLOGY FOCUS:** Management — IT-business service alignment

DISA's Center for Computing Services, at Maxwell Air Force Base in Montgomery, Ala., is a step ahead of the pack on integrating IT with business services — despite a complex environment. The agency is reaping \$140 million in savings annually as the result of a \$3 million business service management (BSM) project that provides a consolidated view of data from disparate, heterogeneous management platforms. BSM greatly eases management of 1,400 applications serving more than 2 million users. Computing Services also can view logical groupings of interrelated physical elements and therefore make sure that its infrastructure is aligned with operational objectives. Using Managed Object's Business Service Management software, DISA has been able to consolidate 18 systems management centers to four, and 16 help desks to four, while cutting in half the time to resolve problems. Customer satisfaction ratings also have risen dramatically.

LEE COUNTY SHERIFF'S OFFICE

- **PROJECT LEAD:** Bryon Haycook, CAD system manager
- **TECHNOLOGY FOCUS:** Wireless — cellular wireless data access

Deputies hit the streets in this southwest Florida county, headquartered in Fort Myers, knowing they are backed up by reliable, high-speed cellular data services. The sheriff's office invested \$1 million to provide access to Sprint's Code Division Multiple Access (CDMA)-based network and, ultimately, next-generation EV-DO services. The wireless data access improves productivity and performance by enabling deputies to stay in the field rather than returning to the sheriff's office to fill out paperwork and submit reports. To manage connectivity for 600 users, the sheriff's office uses NetMotion Wireless' Mobility XE VPN server, as well as GPS tracking software for deputy dispatching. Wireless LANs serve various buildings.

SOUTH CAROLINA DEPARTMENT OF REVENUE (DOR)

- **PROJECT LEAD:** Michael Garon, senior administrator and CIO
- **TECHNOLOGY FOCUS:** E-commerce — Web infrastructure

Entrepreneurs who want to launch a business in South Carolina are getting a helping hand from a state e-commerce site launched in May. South Carolina Business One-Stop walks users through the process of registering a new business and obtaining appropriate licenses or permits. The system asks relevant questions, collects data, facilitates payment via credit card or electronic funds withdrawal, submits applications and communicates with various agencies in a secure online transaction. The project team relied on Microsoft .Net-based Web services and content management tools to support the back-end processing required for the interagency communication. Although the Web site is new, state officials expect it to reduce the time required for launching a new business in South Carolina from weeks to days. This also results in significant cost-savings for business operators. The DOR calculates that the 10,000 businesses launched yearly in South Carolina had been spending more than \$7 million to get up and running, based on an average of \$15 per hour and 47 hours spent per business. The DOR reports a \$4 million project cost, with expected ROI of 100% in three years.

U.S. COAST GUARD (USCG) OPERATIONS SYSTEMS CENTER

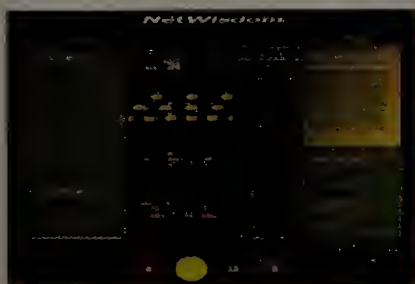
- **PROJECT LEAD:** Lori Kennedy, project officer
- **TECHNOLOGY FOCUS:** Applications — e-mail integration and directory services

To secure the country, the U.S. Department of Homeland Security (DHS) needs personnel at its 22 agencies to be able to send data to each other immediately and securely, despite differences in e-mail systems (some agencies use Microsoft Exchange variants, while others rely on Lotus Notes, cc:Mail or proprietary programs). The USCG Operations Systems Center, in Kearneysville, W. Va., had the task of figuring out how to achieve the interagency information exchange. During a 12-month period, using products from Cisco, HP, Microsoft, Sun and others, it developed and deployed the DHS Directory Services and Email System (DSES). The DSES assigns a uniform e-mail address to approximately 200,000 DHS users, and routes e-mail traffic to, from and between all agencies and the Internet while protecting against viruses and spam. Interagency e-mail no longer gets routed via the 'Net, but across the more secure DHS network. Employees also get access to an electronic directory that provides an up-to-date single source of e-mail addresses across agencies. The center tallied the DSES project cost at \$2 million, while calculating an 8% ROI for year one (the base system became operational in April 2003) and projecting a 24% ROI for year three. The DSES now handles all DHS e-mail, with an uptime rate of 99.99%; stops more than 20,000 offensive messages daily and removes more than 10,000 viruses each day.

0x2b0101 = 12.52
0x2b0101 = 12.34
0x2b0101 = 11.94
0x2b0101 = 11.75
0x2b0101 = 11.37
0x2b0101 = 11.11
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Healthcare All-Stars



The U.S. healthcare industry is renown for its advanced technology. Healthcare net executives are upgrading to huge and sophisticated network technologies in preparation for their next-generation, bandwidth-needy applications. This slate of nine Enterprise All-Star winners illustrates today's technology trend.

QuickStats

- ★ **MEDIAN PROJECT DURATION:**
12 months
- ★ **MEDIAN PROJECT BUDGET:**
\$500,000
- ★ **NOTEWORTHY:** Mean one-year ROI for winning healthcare projects is 164%.



➤ CIO Vince Miller
and Joan McFaul,
director of IT infrastructure,

Convergence for critical care

★ *MetroHealth converges voice and data over wireless IP, delivering better care for more patients — without increasing staff size.*

~ By JOANNE CUMMINGS ~

During emergency heart surgery at MetroHealth System's new Critical Care Pavilion, a patient's vital signs go haywire. The anesthesiologist needs expert advice, and fast. He hits a button on a wireless phone strapped to his waist and is instantly connected to the department chief, who simultaneously conferences in other anesthesiologists. After this quick verbal consult — during which he never leaves the patient's side — the anesthesiologist makes a small adjustment, the patient stabilizes and the operation is a success.

Life-saving real-time collaborative scenarios such as this have become commonplace at MetroHealth System since the Cleveland healthcare group opened its CCP in June 2004. Near the established medical center, the CCP features an emergency department and 17 surgical suites tied together via a state-of-the-art wireless data and VoIP system.

With the CCP's opening, MetroHealth doubled its space and tripled the number of monitored beds. Staff size, however, did not change. This meant that simply extending the medical center's Gigabit Ethernet backbone to the CCP wasn't going to be adequate, says Vince Miller, vice president and CIO at MetroHealth.

"We knew communications was going to be a big issue," he says. "We thought [VoIP] might be the answer." Besides VoIP, wireless made better business sense than giving the on-the-go emergency department and surgical staffs stationary connections to the hard-wired corporate network serving the facility.

So MetroHealth combined the two technologies to create a converged wireless network that has improved operations and patient care while serving about 70,000 critical care patients a year. As a result, MetroHealth — the only Level 1 trauma center serving the region — earns recognition as a 2005 Enterprise All-Star.

Eliminating the runaround

MetroHealth hasn't exactly been conventional with its wireless VoIP setup. For example, it doesn't use Cisco's CallManager IP PBX software, even though it does rely on the Cisco Catalyst 4507 switch at its core and 44 Cisco AP1210 access points. Instead, IT used its Nortel 1000 PBX as the base of its IP system, says Joan McFaul, director of IT infrastructure. "If we had gone all-Cisco, we would have had to put in two telecommunications systems. This way, we . . . retained our traditional telecom infrastructure while implementing wireless VoIP, she says.

For placing VoIP calls, McFaul's six-member

See Healthcare, page 72

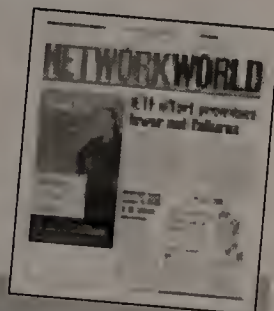
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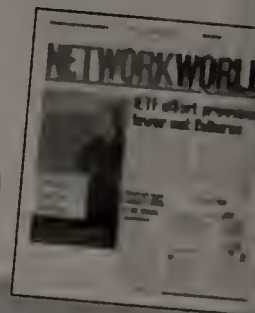
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- QoS for VoIP
- SNMP manageable
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Healthcare continued from page 70

IT team selected SpectraLink's 2211 wireless phones. Spectralink Voice Protocol (SVP) server software, loaded on the Catalyst 4507, ensures that the CCP's 802.11b wireless LAN can support voice and data. The hospital, in turn, can implement new applications that leverage both, she says.

As an example, McFaul describes how MetroHealth's emergency department nurses use the wireless VoIP network. When emergency department nurses come on duty, they log themselves and their wireless phones and headsets in to the nurse call system by swiping bar codes on their badges and the devices. After they key in their patient assignments, the call system database uses middleware from a company called Emergin to map the phones to the nurses' assigned patients and to the cardiac monitors and call buttons in the exam rooms. The nurses not only receive voice calls via the wireless network, but also data alerts from the monitoring devices.

If a patient's vital signs go beyond a preset threshold, for example, a cardiac monitor would issue an alert that the nurse receives via the wireless phone. When any monitor registers a code-blue emergency, all staffers are immediately notified via their wireless phones.

A substantial productivity increase results. "A nurse can receive an alert from the physical monitor or a patient call request and respond to the patient through the nurse call button," Miller says.

"The nurse knows from the phone display the source of the request or alert and can speak with the patient directly."

This saves time, especially in critical situations, McFaul adds. "If a patient calls and says he's bleeding, you need to respond immediately. But maybe the patient just needs a blanket. Either way, you know how to respond, without having to go to the room first to figure out what the situation is," she says. The upshot is that the emergency department staff can handle more patients and monitor more beds, while keeping staffing levels the same, she says.

The wireless VoIP network also makes paging more efficient, Miller says. Previously, emergency department nurses would use desk or wall phones to page doctors and then to receive the return calls. The nurses had to wait near the phones from which they issued the pages, or risk missing the return calls. With the new system, return calls come directly to the wireless phones strapped to the nurses' waists. "Nurses can reach a doctor and have questions answered no matter where they are on the floor," he says. This is a big improvement, especially when lives hang in the balance, and critical care decisions need to be made in seconds.

The system cost MetroHealth \$170,000. Already the productivity improvements and overall ROI are measurable, Miller says. For example, the group no longer needs to devote five staffers to watching patient monitors. There alone the annual savings is \$200,000.

"But the real key is the productivity. It has allowed us to see a greater number of patients with the same size staff," Miller says. "Overall, the physicians, the anesthesiologists, the nurses — and especially the patients — are all extremely happy with it."

Cummings is a freelance writer in North Andover, Mass. She can be reached at jocummings@comcast.net.

>MoreHealthcareAll-Stars

AUSTIN RADIOLOGICAL ASSOCIATION

• **PROJECT LEAD:** R. Todd Thomas, CIO

• **TECHNOLOGY FOCUS:** Wireless — optical wireless networking

When this specialty healthcare provider decided to migrate to an all-digital, Web-based imaging system to serve 65 radiologists at 14 facilities in central Texas, it turned to free-space optics, which provides optical bandwidth from lasers placed line-of-sight from one building to another. Austin Radiological Association selected LightPointe Communications' Flight optical wireless systems, including FlightStrata with 155M bit/sec of secure bandwidth and the FlightLite 100, which delivers 100M bit/sec. With the systems, ARA can expand the business while minimizing infrastructure costs and enhancing communications and collaboration. The firm realized ROI on its FlightLite gear in six months and expects a 12- to 18-month ROI for the FlightStrata equipment.

BETH ISRAEL DEACONESS MEDICAL CENTER

• **PROJECT LEAD:** John Halamka, CIO

• **TECHNOLOGY FOCUS:** Wireless — Wi-Fi-based asset tracking

This Boston medical center is always looking for ways to improve patient care while cutting costs. By optimizing workflows and improving asset management, CIO John Halamka is saving the hospital \$300,000 to \$400,000 annually lost in missing equipment. He selected a Wi-Fi-based asset-tracking system, relying on location-aware technology from PanGo Networks and a Cisco-based wireless LAN. No longer will cardiac monitors and wheelchairs go missing within the sprawling complex. Medical staff can more easily find the assets. Beth Israel Deaconess Medical Center has invested a nominal \$50,000 in the technology, but Halamka says the cost of full deployment should reach into the six figures.

COVENANT HEALTH

• **PROJECT LEAD:** Bill Dean, senior systems analyst

• **TECHNOLOGY FOCUS:** Servers — Virtualization, consolidation

This Knoxville, Tenn., healthcare provider fended off a potential \$1.5 million data center infrastructure upgrade by turning to server virtualization. IT spent \$345,000 on four virtualized nodes from VMware and subsequently has reduced the number of physical production servers by 100 and consolidated 10 test-and-development servers into one virtualized server. Covenant now deploys 75% of its applications on virtual machines, with uptime topping 99%. Provisioning time is down to less than a day, compared with a month or more previously. Covenant also reports capital savings of \$155,000 over 18 months.

LAKE FOREST HOSPITAL FOUNDATION

• **PROJECT LEAD:** Christie Mill, IT director

• **TECHNOLOGY FOCUS:** WAN — enterprise network buildout

This Lake Forest, Ill., organization replaced more than 20 disparate networks in a \$1.4 million network overhaul. The new Cisco-powered Gigabit Ethernet backbone spans the foundation's two main campuses and 10 remote sites in a 20-mile radius. Wide-area connectivity comes by way of an SBC-provided OC-12 SONET ring. Availability of a single, high-speed backbone, combined with deployment of a digital imaging system, has significantly improved the medical staff's efficiency while reducing costs. For example, physicians can view X-rays and other medical images from their computers — either on-site or when tapping into the network via an SSL VPN from home. Lake Forest Hospital Foundation has introduced exclusive services, such as fetal echo cardiography. The foundation says it has cut operational costs in critical clinical areas by as much as 75%, while tallying a \$2 million first-year ROI.

MEDCO HEALTH SOLUTIONS

• **PROJECT LEAD:** Kenny Klepper, COO

• **TECHNOLOGY FOCUS:** Management — business service management

This pharmacy benefit manager in Franklin Lakes, N.J., has crafted a business service management strategy combining Six Sigma best practices with sophisticated service management tools. So far, increasing efficiencies and eliminating system downtime has



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Hospitality All-Stars



As these three Enterprise All-Stars prove, the hospitality industry is innovatively integrating state-of-the-art communications into all business areas, from fast-food orders to guest accommodations. Wireless and convergence technologies have become important tools for keeping in contact with customers, even as they roam a service area.

QuickStats

- ★ **MEDIAN PROJECT DURATION:**
Nine months
- ★ **MEDIAN PROJECT BUDGET:**
\$300,000
- ★ **NOTEWORTHY:** *Mean one-year ROI for winning hospitality projects is 182%.*



➤ Joseph Schuldhaus,
vice president of IT, West Edmonton Mall

Untethered Utopia

★ *West Edmonton Mall turns Wi-Fi into a tourism dream come true.*

~ By DEBORAH MÉNDEZ-WILSON ~

Offering tourists the largest entertainment and shopping complex in the world wasn't enough for West Edmonton Mall's tech-savvy executives.

Located in Edmonton, Alberta, a former fur-trading post in northwestern Canada, the übermall covers the equivalent of 48 city blocks and is billed as "the greatest indoor show on earth." Each year, 22 million visitors flock to the entertainment mecca's three hotels, eight amusement parks, 21 theaters, 110 restaurants and 800 shops. Boredom is definitely not an option. Fantasyland Hotel guests can choose from Roman, Polynesian and other themed rooms, and World Waterpark thrill seekers can scream down miles of slides that stretch like licorice in a candy factory. On Bourbon Street, it's Mardi Gras every day.

Despite such amenities, managers hankered to develop an unused bit of real estate: thousands of cubic feet of empty airspace. In 2002, they launched a plan to build a wireless network that could be accessed anywhere in the mall. With the help of Siemens

Communications, their vision of a secure, end-to-end mobile network is well on its way to becoming reality. Over the past year, the partners have installed the first phase of an 802.11 wireless LAN (WLAN) that has turned West Edmonton Mall into the largest Wi-Fi-enabled entertainment and retail center on the planet. For its above-and-beyond Wi-Fi efforts, West Edmonton Mall earns the distinction of being named a 2005 Enterprise All-Star.

"What we are trying to do is build a community and allow people to connect in that community space," says Joseph Schuldhaus, the mall's vice president of IT.

Conceived as an opportunity to provide staff high-speed wireless Internet services and applications, the project quickly grew into a plan to gain a competitive edge in the mall's three commercial markets: entertainment, hospitality and retail. Motivating managers was the idea that technology has become a pivotal factor in where people decide to work and play.

"We now live in a world where the Internet is always on and always available," Schuldhaus says. "A new breed of location-based tools is emerging that provides connected people with knowledge of services, products and resources that are most convenient to their current location."

Managers wanted a network secure enough for the mall's 16,500 employees to remotely access it from home offices, parking lots and corporate branches. They also wanted to create different user-access policies and applications for multiple types of end users. They looked at several solutions over a three-year period before choosing Siemens' HiPath Wireless portfolio, a centrally deployable WLAN that can be installed over any data or VoIP network. The IT team was sold on HiPath's ability to support VoIP and other real-time applications without requiring users to re-authenticate and re-key as they move around, as well as its Layer 3 overlay architecture, designed for fast, secure roaming.

The \$300,000 Wi-Fi network, dubbed WEMiSphere, serves the mall's Fantasyland Hotel, food court and waterpark. Managers expect to

See Hospitality, page 76

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HOSPITALITY THE ENTERPRISE ALL-STAR ISSUE

Hospitality continued from page 74

roll out 70 more wireless hot spots by next year, bringing the total to 130. The IT team is exploring a real-time video surveillance system for the mall's mobile security force, and is working with Siemens, Dell and HP on tablet PC and PDA products rugged enough to withstand Canadian winters.

Meanwhile, an increase in conference attendees has convinced managers that the network and its competitive pricing plans are drawing new customers. For \$10.95, hotel guests can buy 24 hours of network access that enables them to roam from their room to nearby conference rooms and attractions. For about \$34.95 a month, tenants get unlimited access for online banking, location-based marketing, and Internet-based services for customers and employees.

"By selecting a wireless platform that is based on open standards, we are better prepared to address any application service," Schuldhaus says. "We expect that our own requirements, as well as those of our tenants, will drive those services."

Based on their projections, mall managers

expect to recoup incremental investment costs in less than two years and garner a 120% ROI in 2007 from Wi-Fi access sales and affordable voice-over-Wi-Fi telephony for tenants. The mall's parent company, Triple Five, is weighing a similar installation at the giant Mall of America in Bloomington, Minn., which it co-owns.

Response from West Edmonton Mall customers and tenants has been upbeat. A visitor described a VoIP conference call he conducted over a Wi-Fi phone while his children played at the waterpark. An optometrist reported that he conducts business over the network while his wife, with their children and a laptop in tow, takes care of the shop's accounting on the fly at amusement venues. For Schuldhaus, such satisfaction is all part of delivering the services demanded in today's increasingly competitive and digital business world.

"West Edmonton Mall prides itself on giving people a unique shopping experience," he says. "We promise to keep building on that."

Méndez-Wilson is a Denver freelance writer. She can be reached at madre2@qwest.net.

>MoreHospitalityAll-Stars

Bigari Foods

• **PROJECT LEAD:** *Matt Favier, IT director*

• **TECHNOLOGY FOCUS:** *Convergence — centralized call center*

Bigari Foods, a McDonald's franchise that operates in Colorado Springs, Colo., has taken the fast-food industry into a new world with its innovative use of call-center technology, point-of-sale software and converged voice and data IP services from Masergy Communications. The company has integrated these technologies to enable centralized meal order processing. Customers can place orders from the Playland rather than having to come to the restaurant's front counter, for example. Likewise, a restaurant can offer multiple drive-up lanes without dedicating an order-processing station to each one. The orders are processed centrally at the call center. The company says the convenience factor has led to up-sell revenue on 85% of transactions and a 33% reduction in the staff required at 24-hour outlets. Bigari Foods handles 10,000 transactions daily through the call-center system, with an expected volume of 3.6 million total transactions by 2007. The company expects significant growth as a result of eliminating the need for orders to flow through a restaurant's front registers. The franchise recouped its \$70,000 investment in the centralized call center in eight months.

Carnival Cruise Lines

• **PROJECT LEADS:** *Tom McCormick, manager of network engineering; John Harshaw, director of IT operations*

• **TECHNOLOGY FOCUS:** *Wireless — Wi-Fi-enabled ship*

Worried about losing connectivity as you're steaming toward the Caribbean? There's no problem if you cruise on Carnival's Valor, the first 100% Wi-Fi-enabled ship. The Miami cruise line has outfitted the Valor from bow to stern with four distinct wireless LANs — the corporate data network, the public I-café network, the crew I-café network and an 802.11b/g VoIP network. Wireless VoIP phones are especially helpful in boosting employee productivity. Carnival built its wireless infrastructure using Cisco Catalyst switches and Cisco Aironet access points. For the voice telephony, it uses Cisco wireless IP phones, Cisco Call Manager software and a Siemens PBX. C-band satellite technology carries ship-to-shore communications. Carnival says it cost \$700,000 to build the wireless infrastructure, with an expected ROI of \$725,000 the first year and \$2.5 million in year three.

HEALTHCARE

Healthcare continued from page 72

resulted in up to 99% fewer IT defects reaching customers — which has translated to a 20% improvement in client satisfaction over the last 12 months. A host of BMC Software tools underpins the BSM system, while Invoq Systems' AlarmPoint software provides data for building service-level agreements. Medco slates project costs at \$1 million and estimates saving \$2,000 per help-desk ticket opened.

MOUNTAIN STATES HEALTH ALLIANCE

• **PROJECT LEAD:** *Rich Rairigh, enterprise network manager*
• **TECHNOLOGY FOCUS:** *Wireless — broadband infrastructure*

When this Johnson City, Tenn., healthcare system needed to provide secure access to wireless data, QoS-based VoIP and excellent cellular coverage, it discovered that an RF antenna-based broadband backbone best suited its needs. Using InnerWireless' InnerMobile RF broadband antenna system, Mountain States Health Alliance has built an in-building, shared wireless infrastructure that supports a host of voice and data services, including a Cisco-based wireless WAN. Among applications supported over the wireless infrastructure are bedside records-checking, PDA and wireless guest-service access and Citrix services. MHSA has invested \$2.4 million in the six-hospital rollout. It expects to break even within three and a half years.

NOVARTIS

• **PROJECT LEAD:** *Andreas Wuchner-Bruehl, head, IT security*
• **TECHNOLOGY FOCUS:** *Security — global compliance*

This Basel, Switzerland, pharmaceutical company has implemented two automated security-management platforms to keep its global infrastructure safe and in compliance with the Sarbanes-Oxley Act and other regulations. The platforms discover security and compliance risks, assess their severity, generate role-based reports and offer remediation information. For external risk management, Novartis uses the SeTraSys tool to monitor about 150 devices directly connected to the Internet. IT monitors the internal infrastructure using the same technology, but with a management platform called Kaizen. SeTraSys and Kaizen are based on Qualys' vulnerability-scanning engine, which Novartis has integrated with its database that tracks vulnerabilities and details about networked devices. Novartis not only gets a current view of its security posture, but also can compare changes over time. Previously, each region handled security and compliance on its own.

PARKVIEW HEALTH SYSTEMS

• **PROJECT LEAD:** *Ron Double, director of technology services*
• **TECHNOLOGY FOCUS:** *WAN — SONET ring*

A SONET ring is boosting this Fort Wayne, Ind., healthcare network's WAN bandwidth by 300% to 400%, thus enabling it to realize its grand goal of creating a virtual intensive-care unit serving 60 beds at seven hospitals. Parkview also will be able to transmit larger diagnostic studies, in some cases reducing the time to deliver MRI and other test results from days to hours. The ring includes five OC-48 and three Gigabit Ethernet nodes. Parkview, which uses Verizon's Enhanced Dedicated SONET Ring service, pegs project costs at \$4.5 million over five years, or just \$1,000 more per month than ATM.

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Manufacturing All-Stars



Manufacturers continue to push the boundaries of the extended enterprise. As these five winners show, they are establishing real-time connections through hefty 3-D modeling applications, collaboration tools, sophisticated online parts catalogs or secure wireless networks.

QuickStats

- ★ **MEDIAN PROJECT DURATION:** 18 months.
- ★ **MEDIAN PROJECT BUDGET:** \$166,500.
- ★ **NOTEWORTHY:** Manufacturing winners' three-year ROI range from 225% to almost 2000%.

Team players

★ *Emerson Process Management bridges the gap between 40,000 users on three continents with a highly collaborative extranet.*

~ By SUSAN SCHAIBLY ~

Emerson Process Management, a global supplier of factory automation equipment and optimization services, is an expert at making things work better. Its Enterprise All-Star project, an example of the extended enterprise, is a case in point. Spread across more than 600 locations in 85 countries, the company uses the latest in collaboration and content management technology to span company boundaries, connecting its remote design engineers, suppliers, manufacturing partners, marketing teams and customers. As a result, Emerson saves \$20,000 per year for each supplier extranet, enabling a three-year ROI and net savings of more than \$550,000.

Mark Heindselman, manager of knowledge network and information services at Emerson, launched the platform in 1998, the nascent days of content management, by implementing Stellent's Universal Content Management software. Since then, the system has undergone continuing enhancements to become a complete collaboration platform for Emerson's 40,000 users — including customers, employees and suppliers — who require access to product information. The crowning achievement of its extended enterprise occurred earlier this year when Emerson released its first product that was wholly designed within the Stellent system.

Content management in action

The Universal Content Management platform was fully leveraged for the launch of the GX Control Valve, a product of Emerson's Fisher division. The valve's design process began in 2002, and the valve was introduced to the market early in 2005. The development teams capitalized on the system's unified collaboration, document control and Web content management capabilities.

Five design teams in four countries were involved in the initial stages of the GX Control Valve project. In the past, multiple engineering departments would e-mail or mail drawings, specifications and supporting documents to all necessary parties, Heindselman says. Version control, workflow, document access and productivity were all suffering. "It just wasn't effective," he recounts.

The Stellent system was a virtual revolution in the way Emerson designs and manufactures products. Using the system required several steps. First, Emerson's design teams used Stellent as a Web-based, common repository for product design specifications, competitive data and other critical information. Every time a document was

> Mark Heindselman, manager of knowledge network and information services, Emerson

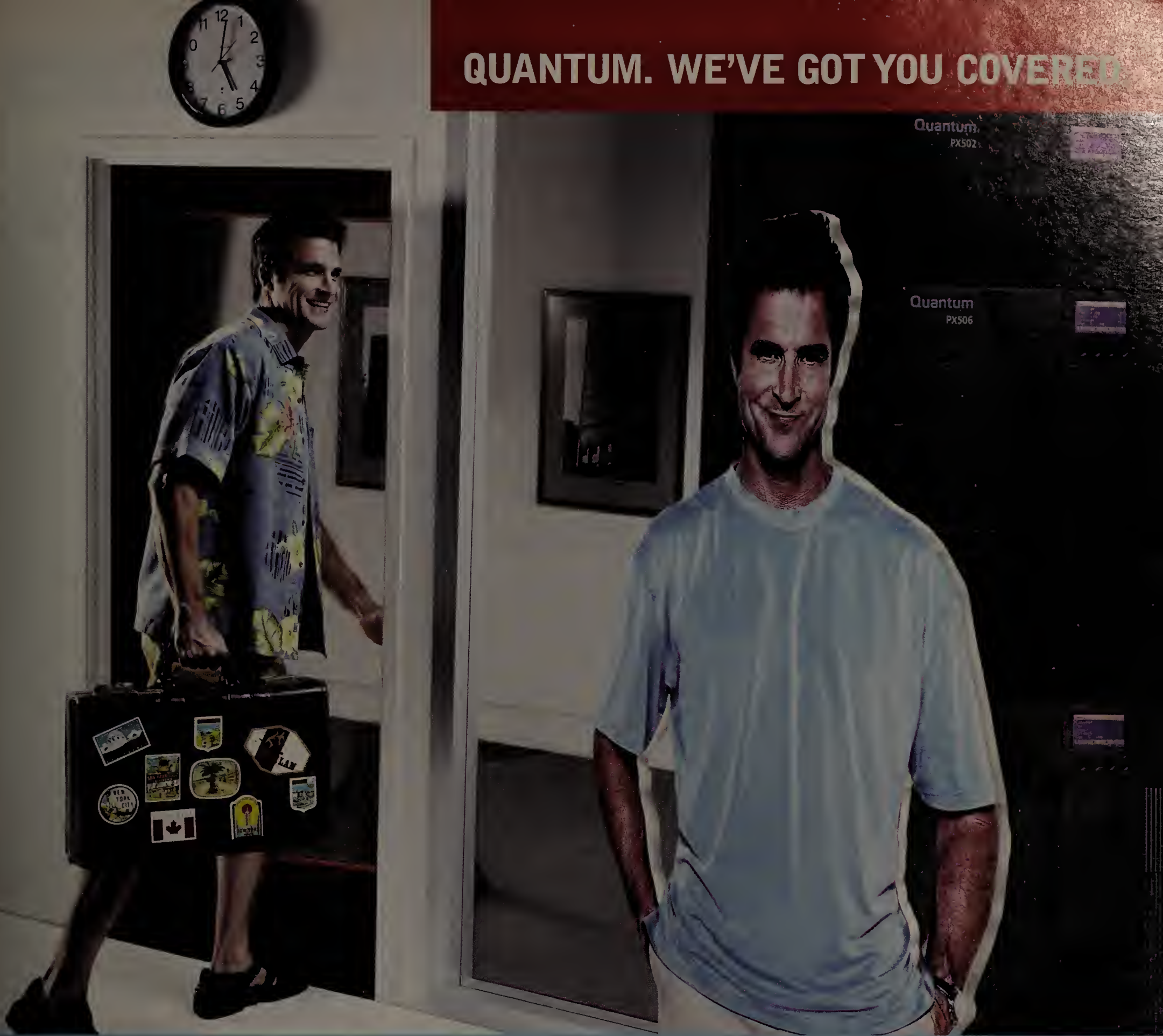


revised, team members received an e-mail notification, enabling immediate collaboration and feedback.

Once the valve was designed and specifications were in place, Emerson faced one of the core challenges of the extended enterprise — the everincreasing access by outside partners to internal resources. "We needed a way to collaborate with the suppliers without having them inside our firewall," Heindselman says. The company also wanted to avoid duplicating its data onto extra servers and incurring the associated capital, operational and licensing costs.

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Manufacturing continued from page 78

The solution was a Stellent-based extranet, which enabled Emerson to get critical information to suppliers while maintaining its own system's integrity and security. The drawings and manufacturing specifications were uploaded to the Stellent Content Server, which served as a repository for all content, regardless of type. Emerson personnel then used three-digit meta-data codes to control distribution of the document. "We can put a single piece of content out on the extranet, but it can have multiple distribution codes. That's the cool part," Heindselman says.

Two supplier extranets were created for the valve project. The first took about 18 days to create. Experience shortened the time frame for the second to just four days. Heindselman estimates that the company saves \$20,000 per year per supplier in paper-handling costs. Increased employee and partner productivity are harder to calculate, but he says the GX Control Valve was brought to market months faster and at less expense than his most optimistic colleagues expected.

The investments by Emerson were reasonable on all fronts, Heindselman says. The company paid \$500,000 for the Stellent system, which was deployed over an existing IT infrastructure and required minimal IT personnel resources. "On our end, it's run by end users," he says. One full-time technician works on back-end support and application development, and a few other users contribute to the ongoing integration of the Stellent system, which is used companywide with more than 150 business applications. About 600 employees contribute content to the server, which employees, partners and customers worldwide access through various portals. Emerson estimates that it has accumulated cost savings of \$3.7 million, much of that in printing, shipping and distribution of millions of pieces of paper each year.

Onsite, the software runs on an HP DL360 G3 server with 2G bytes of RAM and dual 2.8-GHz Xeon processors. The server is connected to a Xiotech XAN, where it uses 150G bytes of storage.

Heindselman isn't afraid to wax poetic about the new way his company handles information. "I see it as a core technology that needs to be in most organizations," he says, emphasizing that it enables the collaboration, immediacy, productivity and adaptability that his extended enterprise demands.

Emerson plans to roll out 10 new supplier extranets over the next two years. Employees will be more productive, information distribution will flow smoothly and some trees may be saved, too. Asked whether he has created the paperless office, Heindselman can't resist a chuckle. "We still have paper," he says, "lots of paper."

At least now everyone is on the same page.

Schaibly is a freelance writer in Fort Collins, Colo. She can be reached at sschaibly@aol.com

>MoreManufacturingAll-Stars

GOODRICH AEROSTRUCTURES

- **PROJECT LEAD:** John Ortiz, business adviser
- **TECHNOLOGY FOCUS:** E-commerce — online parts catalog

Goodrich Aerostructures, a leading supplier of structural aircraft components, lives and dies with its illustrated parts catalog. Thousands of technicians at 650 customer locations worldwide use the catalogs as vital sources of product information. This project, which saved \$1.5 million in production costs in the first year, brought the production and distribution of those catalogs in-house. Previously, the Chula Vista, Calif., company sent raw data to an outside catalog producer, which took about six months to compile the information into catalogs. Now it offers customers Web access to state-of-the-art illustrated parts catalogs that pull information in real time from Goodrich's internal content repositories. Customers get up-to-date information they can use to order replacement parts and components with speed and accuracy. Using Enigma's 3C Platform, the company built dynamic catalogs supporting 50 aircraft programs. Goodrich achieved ROI on this multiyear, \$640,000 project in just six months while improving efficiency and providing better customer service.

LOCKHEED MARTIN

- **PROJECT LEAD:** Jasyn Voshell, wireless LAN security director
- **TECHNOLOGY FOCUS:** Wireless — WLAN security

Given the classified military information riding over its network, information security is a top priority for this Bethesda, Md., defense contractor. The company's aeronautics business, for example, occurs in 150 buildings spread over three states. Hundreds of contractors and 30,000 employees, many of them toting wireless-enabled laptops, roam the facilities. Security officers knew they had to find a way to eliminate unauthorized wireless networks from the company's air domain and to keep legitimate access points compliant with security policies. The security team also wanted real-time alerts on security breaches and policy violations and centralized access-point management. It found the answer in the AirDefense Enterprise intrusion-detection system, which now monitors the campus airwaves — with marked results. Within the first six months of deployment, Lockheed discovered nearly two dozen rogue access points, a battery of contractors either setting up or probing to find WLANs and a host of ad-hoc networks being created to swap classified data. In addition, the AirDefense system helped identify and stop two off-campus attacks. Besides improved security, business benefits include reduced costs and improved productivity and efficiency. For example, Lockheed attributes a two-month decrease in the time it takes to build a fighter jet to its use of wireless electronic work instruction carts for storing blueprints.

NATIONAL INSTRUMENTS

- **PROJECT LEAD:** Brett Childress, director of IT infrastructure
- **TECHNOLOGY FOCUS:** Security — appliance-based anti-virus protection

Operating in more than 40 countries, this instrumentation vendor's 3,500 employees use a variety of desktop operating systems — Linux, MacOS, Solaris and Windows variants. Keeping all systems up-to-date and properly configured was difficult, even with an active patch management program and anti-virus protection. IT solved National Instruments' (NI) problem by deploying agentless security appliances that use a behavior-based monitoring technique to stop worms that get past other defensive layers. Once the appliance — Mirage Network's CounterPoint — identifies an infected machine, it instantly removes the computer from the network so the worm cannot propagate. The appliance notifies the help desk, which works with the employee to clean and update the machine. This year, since rolling out CounterPoint to the corporate campus in Austin, Texas, and seven international branches, the appliance has spotted four worms that had sneaked past outer security layers. NI spent \$175,000 on hardware and maintenance to cover the Austin campus and seven other sites. Over three years, IT estimates it will save between \$234,000 and \$390,000 in IT response costs and lost productivity because of worms.

NOOK INDUSTRIES

- **PROJECT LEAD:** Christopher Nook, vice president
- **TECHNOLOGY FOCUS:** E-commerce — 3-D online modeling

Imagine the configuration nightmare when customized products — screw jacks, for example — have 45,000 basic configurations and millions of potential combinations. That's the challenge that led Nook, which makes linear motion components, to a next-generation Web tool that lets customers configure and download CAD models of its products instantaneously — and then easily and quickly reconfigure and download again to make sure they get the exact configurations needed. The Cleveland company built its online catalog using 3D PartStream.NET from SolidWorks in a project budgeted at slightly more than \$150,000. Previously, Nook handled requests for 3-D models manually, through a process that took about one week.

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Transportation All-Stars



IT projects that ease the burden of regulation, whether by organizing a trainload of paperwork or assisting with compliance, mark the leading edge of the transportation industry. These Enterprise All-Star winners have successfully integrated new technologies into complex environments while saving their companies big bucks.

QuickStats

- ★ **Median project duration:** 24 months.
- ★ **Median project budget:** \$3.9 million.
- ★ **Noteworthy:** Winners collectively expect to save almost \$35 million in three years.

On the road with J.B. Hunt

★ *This winner revs up with a flexible application architecture that is expected to deliver \$30 million in savings over three years.*

~ By SANDRA GITTLEN ~

Plan for common, not unique, requirements. That advice, from Tracy Black, vice president of application development at J.B. Hunt Transport, could save you millions.

Black and the application development team at J.B. Hunt's Dedicated Contract Services (DCS) unit came to this realization the hard way. The team went through many ups and downs in a four-year, \$6.4 million application development project aimed at addressing a serious problem within DCS — overly complex, decentralized account management. So arduous was the project, dubbed the Pace system, that DCS nearly scrapped it.

But persistence paid off. Today, DCS projects a \$30 million, three-year ROI for Pace. And Pace has morphed from a custom-coding project to a flexible, componentized Web services-based system that gives field managers and customers account access anytime, from anywhere.

DCS used the Java 2 Platform Enterprise Edition framework to build Pace, which runs on a series of BEA Systems' WebLogic application servers. A rules engine from iLog allows DCS to address unique contract parameters. Using the rules engine, field managers can easily create and manage individual accounts. And once DCS develops a rule, it can use it for other accounts, Black says.

J.B. Hunt earns distinction as a 2005 Enterprise All-Star for its dedication to get this project right — and the cost savings and business flexibility the company gains as a result. Via Pace, for example, the financial and operations teams receive alerts on deviations in driver pay and customer billing from negotiated contracts and act quickly to resolve issues.

"In the past these deviations might have gone unnoticed for years," says Kay Palmer, CIO at the Lowell, Ark., trucking company.

The long road

The Pace development project got under way four years ago, as DCS set out to remedy problems arising from business processes instituted long ago.

In the 1990s, the DCS unit spurred exponential growth at J.B. Hunt by customizing applications to address each customer's requirements for payroll,

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> Tracy Black, vice president of application development at J.B. Hunt

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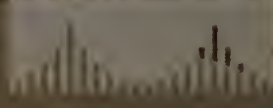
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Transportation continued from page 82

billing and management. "Each customer had a unique business model, and we thought that required different and dynamic applications," says Richie Henderson, vice president of marketing strategy and administration for DCS.

While the customization program boosted J.B. Hunt's market share, creating dozens of new accounts, it eventually took a toll on the IT group. By the late 1990s, IT had to manage and update more than 150 remote PC-based accounting systems. "We started to have problems controlling this decentralized environment — it was no longer cost-effective," Henderson says.

The company's bottom line also suffered. "We have a saying in our industry, 'Pay as you bill, bill as you pay.' With all this complexity, our payments and invoicing were getting out of synch. We lost the integrity of our financial model," he says. DCS knew it needed to streamline and centralize account management, but its initial attempts to do so, around the year 2000, met with disaster. He admits technology enamored the team. "We overbuilt," he says. "We tried to build Pace for the most complex situation — like trying to build a rocket ship to Mars right out of the gate."

Developers also faced resistance from DCS field managers, who wanted to keep the uniqueness of accounts and wanted every feature included in the new application. "The field wanted to be able to change parameters on the fly, and the architecture was just growing too complicated," Henderson says. Because the project had spun out of control, J.B. Hunt's executive management team was on the verge of canceling it. The company had spent millions of dollars, with virtually nothing to show for it, and "there was lost confidence among key executives," Palmer says.

In 2001, attempts to save the project by outsourcing it compounded the problem. "We quickly became disillusioned with what the service provider was offering," Palmer says, and the project was brought back in-house. However, working with the

outsourcer made DCS realize core weaknesses within the team — it lacked knowledge of Java and rules-based logic. After bringing in a new project leader with these skills and educating project members, the team then switched gears and changed its expectations for the Pace system.

"Our turning point was looking at each account for its base requirements, not its unique requirements," Black says.

The team created a matrix of all the account features and then began to plan a rules-based system that accounted for the commonalities that saved time and money on application development. Using XML, the team integrated Pace with J.B. Hunt's MQSeries databases and PeopleSoft ERP application and built the Web component that enabled anytime, anywhere access with dedicated high speed lines.

The result launched in 2004 — and business units began reaping the benefits immediately. Besides the financial and operations teams, for instance, account managers use the system to improve performance. Account managers at remote sites can enter driver activity information and produce weekly driver pay reports, customer invoicing and customer performance reports. Customers are noticing a difference, Palmer says. "We're generating more accurate and timely invoicing for them and offering reporting functionality" and Web account access, she says.

Drivers also are benefiting. They can use their in-cab units to transmit data via satellite or cellular connections into the Pace system. And the centralized system helps J.B. Hunt comply with the Sarbanes-Oxley Act. It gives compliance managers the controls they need to monitor account activity, Henderson says.

Palmer says she is hoping Pace will have a tremendous affect on all J.B. Hunt business units. "We can have better decision support and quickly identify inefficiencies," she says. "This will drive down costs overall."

Gittlen is a technology editor in Northboro, Mass. She can be reached at sgittlen@charter.net.

>MoreTransportationAll-Stars

BNSF Railway

- **PROJECT LEAD:** Jeffrey Campbell, vice president of technology services and CIO
- **TECHNOLOGY FOCUS:** Convergence — VoIP

This Fort Worth, Texas, rail operator recently rolled out the first of what it expects to be many mission-critical voice applications. The Voice Train Reporting application, which runs on network servers, allows locomotive conductors to radio or use cell phones to report pickup and delivery of freight car shipments. The application converts those calls into data, which is then fed into BNSF's Transportation Support System (TSS). Employees and customers have near-real-time access, too. Previously, railroad crew would mark up paperwork orders throughout the day, submitting those to a data-entry clerk at the end of a shift. The new application uses speech-recognition and speaker-verification software from Nuance Communications, an interactive voice response system built on Intervoice's Omnia Voice Framework and customized interfaces. BNSF has invested approximately \$1.5 million in these voice developments, and expects to realize a one-year ROI of 105% and a three-year ROI of 115%.

J.B. Hunt Transport

- **PROJECT LEAD:** Heather Moore, business systems analyst
- **TECHNOLOGY FOCUS:** Applications — remote imaging

Besides the multimillion-dollar Pace system, J.B. Hunt Transport has a notable project underway to automate the processing of shipping documents. Previously, drivers dropped off their documents at designated locations across the country from which couriers brought them to headquarters in Lowell, Ark. Scanning, indexing and storage involved 13 people and took seven to 10 days, says Heather Moore, business systems analyst at J.B. Hunt. Today, drivers send their documents digitally using Transflo scanning stations at hundreds of public truck stops and Transflo automatically indexes and stores them. Within 60 days of implementing the Transflo document management system from Pegasus TransTech, the company saw a 40% reduction in the staff needed to process the documents, Moore says. The project decreased unbilled revenue by 50%, with fewer lost documents.



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More All-Stars

Companies in this segment span a variety of vertical markets, such as media and energy. Like the other winners, these six companies demonstrate how cutting-edge technology is altering business. A new data warehouse or converged network is not only a faster way to accomplish a task but offers the means for new and better business processes.

QuickStats

- ★ **MEDIAN PROJECT DURATION:**
Seven months.
- ★ **MEDIAN PROJECT BUDGET:**
\$282,500.
- ★ **NOTEWORTHY:** *Project budgets in this category ranged from \$100,000 to \$2 million.*

this infrastructure, Weather Underground would not be able to deliver high-quality weather content and still be profitable, Schwerzler says.

"It would be hard to advertise and break even for the cost of the bandwidth," he says.

Weather Underground's efforts to create an inexpensive, scalable infrastructure to deliver weather data via the Web began in early 2000, coincident with a National Weather Service (NWS) policy change. Rather than restricting availability of that information to a few companies through private contracts, the NWS made the data widely accessible. "There was suddenly the availability of a lot of interesting radar data, and it was our project to develop an infrastructure that could scale and bring that data to a large number of end users," Schwerzler says.

With this 2005 Enterprise All-Star Award, Weather Underground earns recognition for creatively using network technology to capitalize on a new business opportunity.

From the sky to the Web

To take advantage of the newly available weather data, Weather Underground installed a large satellite dish at its headquarters in San Francisco. The dish receives weather data retransmitted by the National Oceanic and Atmospheric Administration from 144 NWS field offices. It uses the Digital Video Broadcast-Satellite standard to convert the satellite data into packets, which travel via fiber to the Linux clusters running in the company's data center, also in San Francisco. Weather Underground uses the User Datagram Protocol to broadcast the data to what Schwerzler calls radar servers.

"There you have a very raw product sitting on the machines," he says.

When a user requests a weather map, for example, a custom application running on an Apache Web server packages the raw data and sends it out via the Cogent network in a customized form the user can understand.

Besting the storm

★ *Weather Underground uses Linux clusters and low-cost bandwidth to keep from being pelted by traffic storms.*

~ By JENNIFER MEARS ~

For storm chasers, the excitement is in facing Mother Nature's wrath and coming out unscathed. The paradigm is similar for the IT team at Weather Underground, a Web-based weather service that experiences internal storms whenever bad conditions hit. For example, the number of page views on Weather Underground topped more than 14 million — triple the average — on Aug. 29, the day Katrina hit New Orleans. With users requesting animated radar maps that can be as large as 800K bytes, bandwidth requirements surged to more than five times the average, says Chris Schwerzler, IT operations manager at the San Francisco company.

To survive such traffic storms, the IT team devised a flexible infrastructure that can scale easily and deliver cost-effective bandwidth-intensive data as needed. Computing clusters built out of low-end, Intel-based servers running Linux give the Weather Underground processing oomph, while connectivity from Cogent provides big bandwidth at reasonable cost. Without

> Chris Schwerzler,
IT operations manager,
Weather Underground

ALL-STAR

MORE ALL-STARS

Because it sends the raw data to the end nodes in the cluster for packaging, rather than packaging the data before it receives a request, Weather Underground can deliver weather information faster than the NWS, Schwerzler says.

"If you sit side-by-side with its radar and our radar and hit reload on both, you'll see ours will update sometimes 30 seconds before theirs," he says.

Schwerzler wouldn't specify the number of clusters at Weather Underground but says each cluster ranges in size from eight to 40 servers, and hundreds of servers are in operation. Gigabit over copper provides connectivity for the clustered servers. The majority of the servers are in a Weather Underground data center, although the company recently began collocating some servers and connecting them to its data center via fiber.

No slacking off

Standardizing on Linux wasn't a big leap, as Schwerzler and his team had worked with Unix while at the University of Michigan (U-M). Plus, a free operating system made sense for a non-funded, private company running on a tight budget.

"Linux has appeal since you can replicate it 100,200 times and not have to pay additional site licenses," Schwerzler says. "Plus, you have the ability to tweak and tune at the finest levels that you can't really do with some of the other flavors of Unix."

Weather Underground uses a trimmed-down version of Slackware, one of the only distributions of Linux available in the mid-1990s when Schwerzler was at U-M. In addition, the servers have no hard drives and support Preboot Execution Environment boot, which means they are configurable and deployable via the network.

With that setup, Weather Underground can easily add and retask servers as needed, Schwerzler says.

"We can say, 'OK, you're no longer a radar server, you're now a frontline Web server, or you're now serving our icons,' and reboot the machine, and 30 seconds later you have a new setup," he says.

When Katrina hit, for example, the IT team quickly brought on 48 RackLogic servers it had on hand.

"We couldn't possibly have gotten the servers up that we needed to handle the [Katrina] demand if we hadn't devised this system of being able to quickly replicate our servers," Schwerzler says. "We basically take the machines as they are delivered to us, screw them into the rack, cable them and turn them on with a little bit of configuration. They're up in 30 seconds."

Thanks to the additional nodes, Weather Underground handled the load without a hitch.

>MoreAll-Stars**FREEZE.COM**

• **PROJECT LEAD:** *Kyle Ohme, IT director*

• **TECHNOLOGY FOCUS:** *Servers — automated provisioning*

In a new data center-style project, this Waite Park, Minn., provider of downloadable desktop software sought a way to handle peak server loads without overbuilding the infrastructure needed for quieter periods. In addition, it wanted to be able to repurpose servers on the fly and reduce IT staff time needed for server provisioning. IT selected the Ardence Server Edition server-management tool, which enables the on-demand streaming of Windows from commodity networked storage. When IT needs to reprovision a server, it uses the Ardence software to stream the operating system and associated applications to a blade in its IBM BladeCenter. The download includes just enough of the operating system software to get the blade executing; additional libraries follow when required for the operation. IT can now provision servers in five minutes vs. the previous five hours and move capacity from server to server, and has quadrupled productivity. Freeze.com has about \$1,750 per blade invested in this model, with three fully populated blade centers and two more in staging. This model has enabled IT to reduce at least two full-time server administrator positions and place an increased focus on issues that have an impact on the bottom line.

INTELLIDYN

• **PROJECT LEAD:** *Rajeev Kumar, technical director*

• **TECHNOLOGY FOCUS:** *Servers — data warehouse*

With a \$2 million budget, this data warehouse provider in Hingham, Mass., migrated from a mainframe-based, vendor-specific computing infrastructure to a scalable, highly available and reliable open architecture. Intellidyn collocates the infrastructure, which is powered by Sun servers running Solaris 8, at an AT&T data center. For its storage-area network, the company combines Sun and Hitachi Fibre Channel storage arrays, uses StorageTek tape libraries and handles consolidation, back-up and restore capabilities and clustering via the Veritas Foundation software suite. SAS provides business-intelligence tools. Intellidyn expects to realize a 685% ROI in year one as it becomes more agile.

RELIANT ENERGY

• **PROJECT LEAD:** *Courtney Hebert, manager, internal controls effectiveness*

• **TECHNOLOGY FOCUS:** *Applications — SOX compliance*

In the course of two months, this Houston-based electric utility ushered in significant process improvements and increased efficiencies through implementation of a technology framework for document

management and compliance with the Sarbanese-Oxley Act. For example, Reliant has reduced time spent adding up spreadsheet information for weekly reports from four days to a half day. With easy report customization, building reports for internal business users or external auditors is an almost instantaneous process compared with the couple of days previously required. Sarbanese-Oxley compliance, which many companies still must conquer, has become a matter of course, easily and cost-effectively met through the new framework, provided via Stellant's Sarbanese-Oxley Solution. The framework serves as the foundation of the company's new Reliant Energy Sarbanese-Oxley Resource Tool, which gives the compliance team an enterprise view of the company's internal control makeup so it can track and schedule changes based on business proprieties. The project cost \$110,000.

THE WEATHER CHANNEL

• **PROJECT LEAD:** *Kevin Gungiah, director of systems administration*

• **TECHNOLOGY FOCUS:** *Storage — tiered storage*

Challenged by the need to provide value-added services while reducing cost of ownership and improving flexibility, the Weather Channel's IT team crafted next-generation server and storage infrastructures. The Atlanta-based company doubled performance by migrating applications and databases from Unix to HP Integrity Linux servers, running the Red Hat operating system. In turn, it then consolidated servers. By implementing tiered storage, using Hitachi Lightning and Thunder arrays, the company recovered more than 30T bytes of Tier One storage capacity. Tools in the Veritas Storage Foundation suite enable IT to move data from one storage tier to another. The Weather Channel estimates it has lowered the total cost of server ownership by 90% through this \$315,000 project, saving as much as \$1 million on hardware and software maintenance, and saving another \$1 million through consolidation in the Linux environment. In addition, it has created a foundation on which its business can grow with value-added services.

UNITED WAY OF THE TEXAS GULF COAST

• **PROJECT LEAD:** *Michael Joplin, vice president of IT*

• **TECHNOLOGY FOCUS:** *Convergence — VoIP network*

This Houston fund-raising organization carefully watches spending but knows that scrimping on technology doesn't make for good business. That's why IT knew a converged voice and data network was the right architectural choice to use at a new facility. With its Cisco VoIP system, IT estimates saving 30% on cabling costs. IT also distributed Research In Motion's BlackBerry handheld devices, which integrate with the VoIP system to provide employees access to e-mail, voice mail, faxes and calendars wherever they are. Staff at community resource centers also have gotten a boost from the converged network, as they can conduct low-cost videoconferences over it. United Way invested \$250,000 in this project and expects to see \$120,000 in savings in the first year and \$200,000 by year three.

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Where have you gone, Bobo Holloman?

★ *How to make sure you're not a flash in the pan but rather an All-Star worth remembering.*

Signature
SIGN-OFF

~ By JOHN GALLANT ~

If you're any kind of baseball fan, you're familiar with Ted Williams, Hank Aaron and Brooks Robinson.

But do you remember Mark Fidrych, Joe Charboneau or Bobo Holloman?

Williams, Aaron and Robinson are among the 258 people — less than 2% of all players and managers who ever wore a uniform — to be inducted into the National Baseball Hall of Fame in Cooperstown, N.Y. They're in the pantheon of sport's true All-Stars.

Fidrych, Charboneau and Holloman are something else entirely. They're among the other 98% of players, some of whom made their mark on the game ... some who did not. Not to put too fine a point on it, but they were flashes in the pan. One-hit wonders. Flavors of the week or month.

The quirky Fidrych talked to the ball — often obscenely — and for one brilliant season, in 1976, was an unstoppable pitcher for the Detroit Tigers. The Bird, as he was known, went 19-9 with a stingy earned run average of 2.34. He was the toast of the league, but he quickly faded into obscurity. In the four subsequent years of his short career, he posted a combined 10-10 record before quietly bowing out.

In 1980, "Super Joe" Charboneau was named American League rookie of the year, boasting a .289 batting average and nearly 100 runs batted in. In the next two years, he played only 70 games before disappearing from the sport. Holloman flared out even faster. He was one of a handful of pitchers to hurl a no-hitter in his first major league appearance, but he won only two more games that season and — poof — was gone.

What separates a Hank Aaron from a Bobo Holloman?

That's difficult to say — idiosyncrasies, injuries, fate, among other things. Maybe Holloman didn't know how to pace himself. Perhaps he angered the gods of baseball (as the Red Sox and Cubs seemed to have done). Maybe he just wasn't built to last. Maybe he had only one great game in him.

It's easier to say what unites the Hall of Famers, the perennial All-Stars. They're linked in their rigorous

training, the intensity with which they study their craft and their opponents, devotion to honing their skills and an absolute commitment to the game. Williams was perhaps the ultimate student of baseball, a hitter so dominant that opposing teams devised special defensive formations to try to stop him. He even wrote a book for future batters called "The Science of Hitting."

Why? Williams summed it up when he said: "A man has to have goals — for a day, for a lifetime — and that was mine, to have people say, 'There goes Ted Williams, the greatest hitter who ever lived.'"

The same holds true for the people and companies

celebrated in this inaugural Enterprise All-Star Issue. They aren't one-hit wonders basking in the glory of a single project or technology implementation. They've executed long-term strategies centered on changing the way business gets done.

That's what it takes to succeed in IT today.

There's no shortage of technology out there. The truth is that companies can't absorb all the new products and services that are presented to them daily. And there is no shortage of problems to resolve — security, mobility, compliance, remote office networking. That's just a subset of the major challenges IT managers face.

The only way to deal with these challenges and to make a difference for your company is to take a disciplined, long-term approach to IT, one that's based on a clear understanding of your company's needs and the strengths and weaknesses of your systems. Success requires an intense focus on the future and a commitment to moving your IT organization forward. It requires that you study more intently and more intensely than others are willing to do.

Some have said that the current era requires a return of IT architecture, which is true. During the client/server era and the tech bubble, we threw a lot of servers, bandwidth and storage at every problem.

But we need to revitalize data centers to virtualize resources and provide far more flexibility. We need to break the bounds of monolithic applications and embrace the adaptability of Web services. We can't do either unless we have a goal in mind, a road map for getting from here to there, an architecture for the structure we're building.

Want to be an All-Star? It's not magic. Redouble your commitment to your craft. Remember what another All-Star, football's Vince Lombardi, said: "The quality of a person's life is in direct proportion to their commitment to excellence, regardless of their chosen field of endeavor." ■



E-MAIL NEWSLETTER SHOWCASE: TECHNOLOGY EXECUTIVE

A perfect gift for your tech geek

BY LINDA MUSTHALER

If you've been in the network business for any length of time, then the phrase "network analysis" is synonymous with the name "Laura Chappell." As founder of the Protocol Analysis Institute, Chappell is the industry expert on packet-level analysis and security. Her expertise is in high demand, and she cherishes her client list includes: High-Technology Crime Investigation Association, Institute for Network Professionals, and the U.S. Armed Services.

Chappell is one of those rare people who really knows her stuff and wants to share it with everyone. She has published many stories, books and video segments that tell people how to use specific tools to learn exactly what is happening on their network.

Even if you can't take one of her

courses in person, you have the opportunity to learn from this network authority through the four-DVD set of the "Laura Chappell Master Library." It's a great way to spend a rainy weekend, better than watching the full set of "Star Wars" videos!

The Master Library is a comprehensive collection of Chappell's renowned training materials. The set sells for \$2,000 but has a retail value of more than \$7,000 if you were to buy the course materials separately. Tell your boss to budget the meager \$2,000 to give you some of the most in-depth training you'll ever get — it's worth it.

Volume 1 of the set gives you more than 35 hours of training covering the following topics:

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Volume 2 gets you into interpreting trace files. Chappell's training includes more than 50 narrated screen-capture videos demonstrating unique situations dealing with hackers, spies and unusual traffic patterns.

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When your head stops spinning from all that knowledge, you can tackle Volume 3, which includes eight electronic copies of books written or edited by Chappell. The total page count of these books is more than 1,400 pages, including the following titles:

• Introduction to Network Analysis (Second Edition).

• Advanced Network Analysis Techniques.

• TCP/IP Analysis and Troubleshooting.

• Hands-On Cisco: TCP/IP LAN Configurations.

• Packet-Filtering: Catching the Cool Packets.

After that bit of light reading, you're ready to move to the hands-on self-study labs, which are also part of Volume 3. Then it's on to Volume 4, Chappell's video seminars. You'll get six full-length

video training courses along with their electronic manuals on topics such as Introduction to Network Analysis and Network Design and Data Paths.

But wait, there's more! Chappell throws some bonus material into her Master Library in the form of an introduction to wireless LANs by Keith Parsons of the Institute for Networking Professionals.

The holidays are approaching, folks. Tell your friends and family members that you want Laura Chappell's Master Library for your gift this year. It's enough to keep a technical geek happy for a year or more.

Musthaler is vice president of Currid & Company, a Houston technology consulting firm. She can be reached at Linda.Musthaler@currid.com

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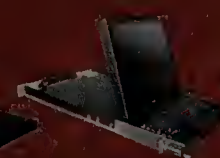
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E-MAIL NEWSLETTER SHOWCASE: IDENTITY MANAGEMENT

Banks question security guidelines

BY DAVE KEARNS

There were a surprisingly large number of interesting comments and insights that came out of the recent Digital ID World - Financial

Services conference in New York.

The primary topic of conversation was the recently promulgated guidelines for strong authentication for online banking (see [www.](http://www.networkworld.com)

networkworld.com, DocFinder: 9828) authored by the Federal Financial Institutions Examination Council, officially titled "Authentication in an Internet

Banking Environment."

In a newsletter a couple of week's ago (DocFinder: 9829), I mentioned how security token vendors were quick to point out

that their products were just the thing to satisfy the guidelines. But as was pointed out by Forrester Research Analyst Jonathan Penn and Michael Barrett, vice president, Security Strategy and Architecture for American Express and the former president of Liberty Alliance, the guidelines not only fail to specify using tokens as a second authentication factor, they also don't mandate using multiple factors. Multi-factor authentication is strongly suggested, but only for those transactions deemed significant. Instead, the whole thrust of the guidelines is that banks should consider how to mitigate any risks that are involved in how they handle online authentication and presentation of data.

One speaker at Digital ID World even pointed out that multi-factor authentication isn't the same as multi-mode authentication, where "mode" refers to the traditional three methods: something you know (password), something you have (token) or something you are (biometric). IP address or geo-location could also be a factor.

Another speaker raised the specter of users with multiple online accounts having to wear a necklace to hold all of the key chain type tokens that companies such as RSA Security and Vasco are promoting for institutions to issue to satisfy the guidelines.

While digesting all of that, keep in mind a simile that another attendee told me about. We were talking about the benefits of building in authentication security from within an application as opposed to adding it on as a wrapper or a totally different app. "Add-on security," she said, "is like putting a padlock on a split rail fence. It keeps the cows in, but it doesn't keep the rustlers out."

Kearns is a writer and consultant in Silicon Valley. He can be reached at info@vquill.com.

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E-MAIL NEWSLETTER SHOWCASE: NEW DATA CENTER STRATEGIES

Connecting real estate to cyberspace

BY ANDREAS ANTONOPOULOS

Convergence has had a significant impact on enterprise networks and data centers, with voice and video and data frequently carried on the same IP network. But one aspect of the data center that is lagging in "connectivity" is the facility itself.

A data center is more than a collection of computers and network gear. It is a controlled environment with sophisticated temperature and humidity controls. Uninterruptible circuits with standby batteries in case of a power failure provide enormous amounts of power. Physical-access control through biometrics and security monitoring through cameras and sensors provide a blanket of protection against unauthorized access. Fire-suppression systems and various other mechanical systems are also part of this unnoticed infrastructure.

Yet today, none of these systems are connected to the network. There are many reasons why data center facilities should be as "wired" into the network as the computers.

Most data center managers can pull up a facilities report and find how much they spend on electricity each month. But they would find it hard to determine which parts of the data center consumes the most power, or how power consumption fluctuates. Network management systems provide an overview of the computers and network elements in the infrastructure. Looking at a logical diagram of the data center, operations managers can see failed systems blinking red and quickly identify the source of a problem. Overlaying security cameras, fire controls, sensors, electrical supplies and cooling systems over such a diagram would give the data center manager an overview of the facility.

Companies are combining research in intelligent buildings with new mesh network technolo-

gies such as Zigbee to build intelligent data centers. Vendors such as HP, with its Intelligent Building initiative and Cisco, with Connected Real Estate, are gradually bringing this vision into reality.

While many data center facilities controls have been automated, the convergence of IP and building automation will bring further benefits. Data center managers can integrate building manage-

ment into their network and systems management software by converging all this information on a common IP network. This will increase the coordination of resources in the data center. It's time

to re-examine building facilities.

Antonopoulos is principal research analyst at Nemertes Research. He can be reached at andreas@nemertes.com.

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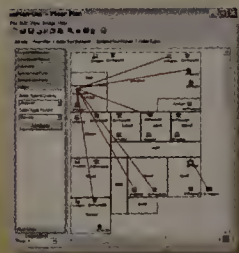
IDENTIFY active components of your network on the other end of the cable. Identify all types of equipment and port service discovery with advertised speed ratings and DHCP negotiation. Access IP addresses, ping equipment and flash hubs/switches for positive port location.

CONFIGURE links between nodes at Gigabit speed.

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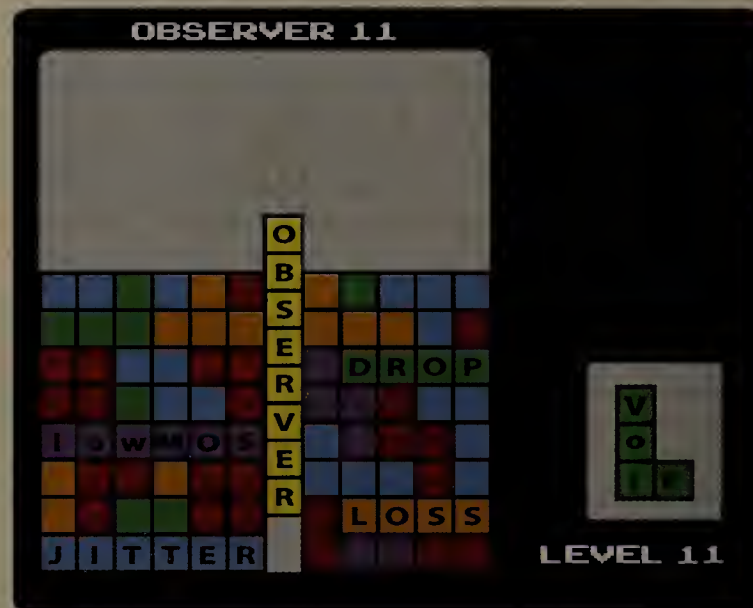
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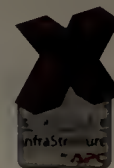
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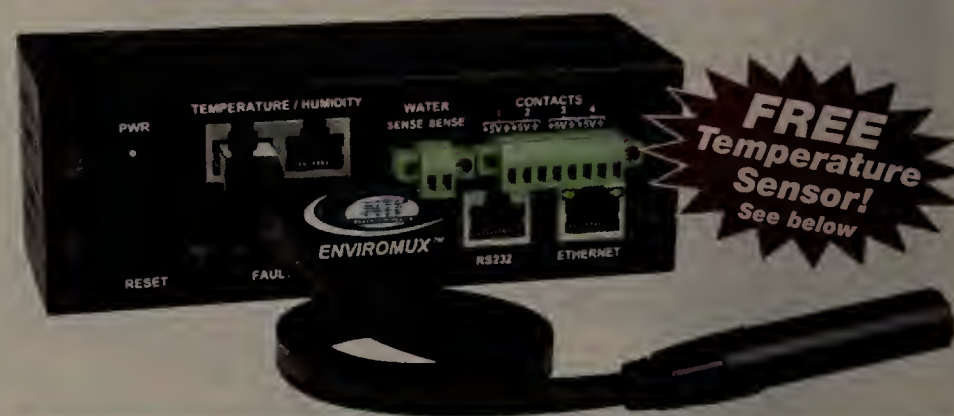
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Aluminum Cabinets provide protection against dust, moisture, and EMI



The new Form 4 range of rugged aluminum cabinets from Optima EPS has been designed to provide reliable protection to UL-508 Type 12 specifications, as well as offering options for up to 100dB of EMI attenuation. The cabinets are easily customized to suit the required height, depth, and width, including 19" and 24" widths

The combination of Nema 12 protection and RFI shielding in a low weight cabinet makes the Form 4 cabinet suitable for a wide range of applications, such as computer simulation, test and measurement, industrial control, and computer storage installation. For maximum flexibility, the reinforced doors are field-reversible and open 122 degrees for access, with concealed hinges and multipoint locking for security and clean lines.

Wall-mount swing frame suits both electrical wiring and 19" electronic equipment applications.



Optima EPS announces the launch of a versatile range of wall-mount swing frame cabinets, designed to suit both electrical wiring and electronics applications. Locks to the rugged front and rear doors permit the whole frame to clear the wall to simplify installation and maintenance for electrical contractors and manufacturing, instrumentation, and automation applications. The Frame is designed to accept standard 19" racks and fittings, as well as electrical components, and is available in a range of colors and six standard sizes from 23" x 14" to 48" x 20".



Cabinet Passes NEBS Level 4

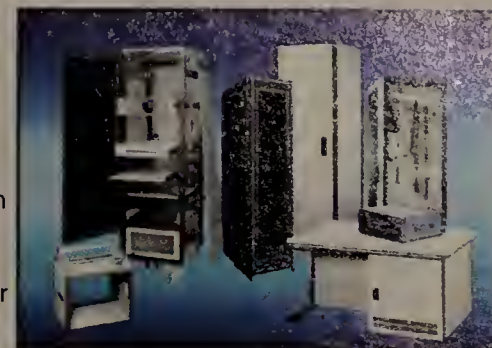
This range of 19" and 24" wide cabinets use welded aluminum construction to provide lower weight NEBS compliance for seismic regions. Heavy-duty-aluminum extrusions are combined with seven-gauge steel base to provide a rugged floor-mounting design able to resist shock, bending and vibration stresses. The cabinets are designed for deployment in earthquake-prone areas to Zone 4, and comply with Belcore TR-63/ANSI-329, suiting applications in defence, rack-mount computers, manufacturing, and telecom.

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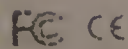


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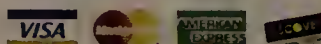
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BACKSPIN Mark Gibbs

Our third annual Golden Turkey Awards

Thank you ladies and gentlemen, thank you very much. [Riotous applause.] No, you're too kind, too kind. Oh stop it.

[Applause slowly dies.]

Welcome to the Gibbs Institute's Third Annual Thanksgiving Golden Turkey Awards. It seems like no time at all since our last awards, but there you go. Time flies when you're having fun! [Uproarious laughter.]

Seriously though folks, 2005 has been a great year for Golden Gobblers, which is to say, those individuals, companies or entities that don't, won't or can't come to grips with reality, maturity, ethical behavior or social responsibility because of their blindness, self-imposed ignorance, thinly veiled political agenda, rapaciousness and greed, or blatant desire to return us to the Dark Ages.

Our contenders last year were a varied lot of miscreants, buffoons and stooges, and after you pondered long and hard, you voted The Santa Cruz Operation and Microsoft as Top Turkeys.

Much to our surprise neither Darl McBride nor Steve Balmer got in touch to claim their rewards. [Appreciative chuckle.]

So who are we going to put on the rack this year?

Contender No. 1: SBC (see www.networkworld.com, DocFinder: 9846). I wrote about switching from a static to

a dynamic IP connection, and then adding Vonage. My service quality took a nose dive and my blood pressure went dangerously high after dealing with tech support. From letters you sent in it seems I'm not alone.

Contender No. 2: VoIP for consumers (DocFinder: 9847). At first blush consumer-grade VoIP appears to be a great idea, but the reality is without broadband providers (such as SBC) ensuring QoS, the call quality will often be poor and problem resolution a nightmare. Until someone figures out how to make consumer-grade VoIP as reliable as plain old telephone service lines, only the geeks will be interested.

Contender No. 3: The Social Security Administration (DocFinder: 9848), which killed off my mother-in-law. She's still waiting to see if she's really dead.

Contender No. 4: Apple (DocFinder: 9849). A few months ago I got my first new Mac in more than 10 years — a really cool twin-processor G5 with 1.5G bytes of RAM, and I was a believer that Apple knew how to do computers right. I discovered I was wrong. OS X is great but Apple's flagship productivity suite, iLife, is about as robust as a hammer made of jello. I can now crash iPhoto in at least three repeatable ways. Sad.

Contender No. 5: Rock Star Games (DocFinder: 9850), for the poorly hidden sex scene in "Grand Theft Auto: San

Andreas." How dumb can your engineers, management and PR machine be?

Contender No. 6: Cisco (DocFinder: 9851). On the Gibbs Institute Snafu-o-meter, Cisco went off the scale over the Michael Lynn case, wherein Cisco tried to use security by obscurity combined with security by a lot of lawyers to suppress a presentation of a potentially dangerous exploit in IOS, Cisco's router operating system. The fact that another major flaw was found in IOS and made immediately public just a few weeks later was ironic.

Contender No. 7: The Federal Emergency Management Agency (DocFinder: 9852). The Internet Explorer-only aid assistance application fiasco was so amazingly dumb that it defied belief.

Contender No. 8: Sony BMG (DocFinder: 9853). A company whose digital rights management (DRM) software is as welcome as a chicken with a cough. This contender is an obvious hot favorite for an award given the current brouhaha over its ridiculous and ill-considered DRM deployment.

That's our lineup for this year [Applause], but please feel free to nominate your own favorite birds.

Send feedback to backspin@gibbs.com and check Gibbsblog (www.networkworld.com/weblogs/gibbsblog/).

► Cast your vote for the Golden Gobbler online at www.networkworld.com, DocFinder: 9860.



Paul McNamara

NETBUZZ News, insights and oddities

Time is money: Here's one way to get paid

A recent column about paying for online content — and stubborn opposition to same — prompted a reply from Lance Walley, co-founder of a company called FaceBridge Research.

"Maybe I'm weird, but I'm amazed at how many people think anything, really, should be free," Walley writes. "Nothing is produced for free, at least not with any regularity."

Walley's not weird and his point isn't an academic one: FaceBridge is pushing technology that promises to let anyone easily charge a per-minute fee for one-to-one, voice and video access to themselves over a VoIP or instant-messaging network. The first iteration runs atop Apple's iChat AV with plans afoot to support Skype and Windows AIM. One-to-many capabilities are also on the drawing board.

"We see our technology as a natural for almost any professional who's paid by time but who has to invoice separately today," Walley says, citing lawyers, computer technicians and "life coaches" as examples. "Automatic record-keeping, billing and payment for that 12-minute phone call has to be better and more efficient than current systems."

If you want to check out an example of the technology, visit www.flavorsofasofa.com, where a growing collection of content providers are making their services available.

The concept sounds enticing, but it is the potential of extending the model from one-to-one to one-to-many communications that has Walley most excited.

"Pay Per View is something everyone understands, but it's currently reserved for the very special and the very rich," Walley says. "If you're a small garage band with 500 fans in L.A., you can't possibly do a PPV via Comcast. But what if you could set up your Webcam and broadcast over 'xyz' IM/VoIP network and charge your fans? And this could be done even if you're doing a live performance somewhere. . . . Now, before you think this particular app is oddball, just ponder the following words: iTunes/iPod, MySpace, Murdoch. Music grabs people."

The FaceBridge concept is by no means fully baked.

First of all, the initial focus on Macintosh, however defensible from a technology standpoint, does prevent a sizable portion of the company's potential audience from participating in the test drive. The founders promise that the version for Skype and Windows AIM will not be far behind.

Potentially more problematic is the matter of processing credit-card payments on the back end, an extraordinarily expensive proposition, especially for a fledgling company. To recoup those costs, FaceBridge generally takes a 25% cut of the fees paid to those offering services on Flavorsofa.com. The goal is to knock that down to 5% or replace the cut with a nominal connection fee.

Finally, there's the seemingly obvious question about a certain kind of service — nudge-nudge, wink-wink — that might find its way onto a one-on-one video network. "Everybody immediately associates us with porn," acknowledges Tom Mornini, co-founder of FaceBridge.

While FaceBridge has no desire to referee what happens in the privacy of its customers' Web browsers, it's clear that the company has a larger purpose in mind for its patents. And besides, the porn industry has done quite well billing customers without the help of these guys.

Fast start for TimesSelect

While on the subject of paid content, get a load of the early returns regarding *The New York Times'* closely watched TimesSelect offering: about 135,000 individuals have ponied up \$8 a month or \$50 a year to gain online access to the paper's lineup of columnists and other goodies. Because the company did not provide a breakdown of those subscription options, we cannot tally the revenue precisely, but suffice to say we're talking millions. Not bad for less than two months into an experiment that critics have had great sport ridiculing.

Sending e-mail to me remains free. Same goes for my replies. The address is buzz@nww.com.

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